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THIS WEEK

AMIGA

Fancy upgrading your A500 to 16MHz for only £25?

ATARI

Should you support the Software Pirates Club?

PC

IBM's new multimedia system...**Plus**...How to build your own virtual reality

ARCHIMEDES

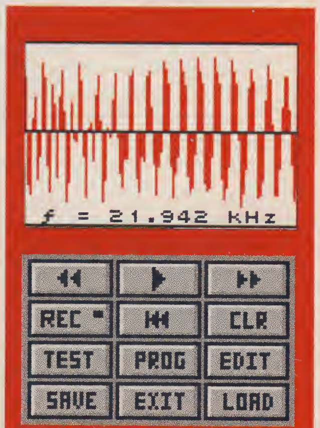
CD quality sound at last

RISC-BASED MAC LAPTOP ON THE WAY

– and it will use Archimedes technology! Acorn and Apple join forces – page 7

DON'T BUY A TURKEY!

The EXPRESS guide to Christmas shopping



On test:

Two new ST S-s-samplers

PLUS

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CONSOLES
TECH TIPS
USER GROUPS
PD SOFTWARE
& 52 PAGES OF
SHOPPING EXPRESS
BARGAINS !!!

PC-Ditto Super Diem

A 286 PC IN YOUR AMIGA

Head to Head: KCS and ATonce

49
9 770957 064011

frontend

edited by Colin Campbell

Magical effects from Mexico

Worried about the allegedly harmful affects of electro-magnetic emissions from your computer monitor? A company in Derbyshire claims it has come up with the ideal solution.

But it's not a marvellous piece of technological wizardry – it's a Mexican cactus plant.

The Abbey Brook Cactus Nursery in Matlock claims sales of its Cereus Peruvianus have increased massively since an article appeared in a women's magazine stating that the plant – usually found on high desert plateaus of Mexico – could soak up harmful VDU rays.

Swiss scientists have found that the Cactus' long spikes can pick up the radioactive waves and digest them. Peruvianus is already being nicknamed The VDU Plant.

The nursery's boss Dr Gillian Fearne commented: "The Sun's radiation is very intense where the cactus grows naturally, which may explain why it has this ability to absorb the energy emitted by computer screens. Scientific tests show that it really does work."

For your VDU Plant, call 0629 580306. ■

Your mission should you choose to accept it

This story will self destruct in ten seconds... so read carefully.

Intelligence suggests that devious plans are afoot to launch a video game based on the exploits of 1960s defenders of democracy The IMF.

This team of upstanding Americans, which rose to prominence in the television series *Mission Impossible*, will feature in a Nintendo game due to be launched next year.

Nintendo says the game is, well, impossible. You have to control three IMF agents as they thwart criminals and communists. A spokesman offered: "This game will not be for beginners." ■

Techno revolution

Two thousand years ago, the Roman politician Cicero said "there is nothing so absurd that a philosopher has not said it". It's a good thing he isn't around now to hear the rubbish spouted by a new wave of so-called 'technological philosophers'.

Take Professor Walter Christ of Zimmerli. Last week he was telling Berliners that the collapse of the old East German regime was largely to do with recent advances in open computer systems.

He said: "No political revolution ever could happen without a preceding revolution of thought. This time it was a revolution brought about by technologically meditated information and communication."

Talking at the third Open Systems Symposium he reasoned that the fall of the Berlin Wall was part of the broader inevitable triumph of open information systems. "Computers," he wheezed, "cause and create new metaphorical patterns of thought." ■

Colour lightens up

US manufacturer Focus Systems has launched what is being described as computing's "first lightweight full colour monitor" that utilises passive liquid crystal display technology.

The Focus LCD can display up to 5,000 colours together on screen and is compatible with IBM PCs or Apple Macintosh machines.

The firm says users who find traditional colour monitors too heavy will be stepping in for the 2.7kg LCD.

It's likely to cost about £2,000. Call UK distributor DRP Displays on 041-427 4333. ■

Hard disk shock for raised Rose

Nine years of scientific research documentation based on the rescued wreck of Tudor warship the Mary Rose was lost recently after the Mary Rose Trust's hard disk crashed and back-up systems failed.

However, data recovery team Kode Computers stepped in to rescue the sunken information, and managed to locate all the records.

Scientists have been collecting data on the Mary Rose since she was raised in 1981. The Trust's Andrew Elkerton said: "It's got to be every computer manager's nightmare. The hard disk crashed and then we discovered that our back-up system hadn't been working properly. All our scientific records were on that disk. If it had been lost we'd have been back to 1981." ■

COMPUTER BLUNDERS BIOLOGY EXAMS

A student is contemplating suing an examination board after its computer marking system malfunctioned and failed her crucial A-Level paper.

Sarah Jane Fogell was hoping to achieve the grades which would win her a place at Leicester University where she planned to read medicine. She was awarded a grade C in Biology, but it emerged later that she had really achieved a grade B. By the time the error came to light she had missed out on the opportunity of a place at the university, and had taken a low-paid clerical job.

She was only one of more than 100 Biology students who had been graded below their performance. The Joint Matriculation Board in Manchester says its mainframe had malfunctioned. The IBM 4331 uses two optical mark readers to scan multiple choice papers, but it had missed large chunks of the papers.

Fogell, who says she may sue the JMC, commented: "It's a year out of my life and it isn't my fault. I'm not sure what action I can take, but it would be worth doing something if it could stop this happening to other people in the future." ■

CLASSIC SKY-HIGH SALES

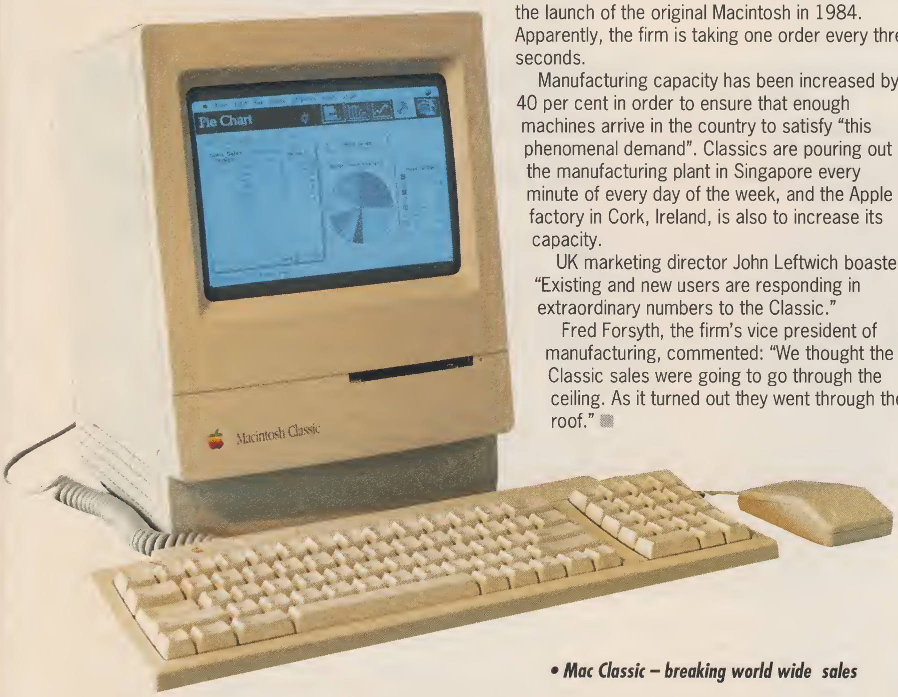
Apple has slipped into full hyperbole mode as the shipping date for its low-cost Classic Macintosh edges ever-closer.

Buyers have been placing orders since the £575 machine's official launch in October at such a rate that Apple UK claims to be "breaking worldwide sales records". Demand is reckoned to be higher than the frenzied buying which followed the launch of the original Macintosh in 1984. Apparently, the firm is taking one order every three seconds.

Manufacturing capacity has been increased by 40 per cent in order to ensure that enough machines arrive in the country to satisfy "this phenomenal demand". Classics are pouring out of the manufacturing plant in Singapore every minute of every day of the week, and the Apple factory in Cork, Ireland, is also to increase its capacity.

UK marketing director John Leftwich boasted: "Existing and new users are responding in extraordinary numbers to the Classic."

Fred Forsyth, the firm's vice president of manufacturing, commented: "We thought the Classic sales were going to go through the ceiling. As it turned out they went through the roof." ■



• *Mac Classic – breaking world wide sales*

Maggie makes sweet success

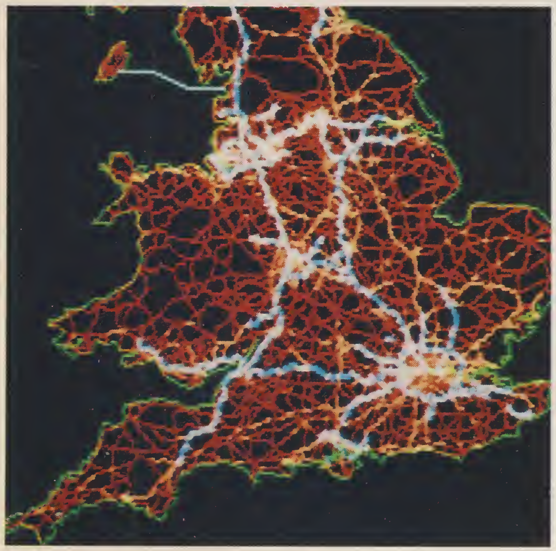
Amstrad boss and self-made computer millionaire Alan Sugar has praised former Prime Minister Margaret Thatcher for helping the company on its road to success.

In the wake of Mrs Thatcher's recent resignation he praised her for "creating the atmosphere for business success".

He told *The Sun* newspaper: "When Amstrad went public in 1980 our sales were £9 million. Now we sell £600 million a year to 50 countries." ■

• *"Phew ! Making millions is really quite exhausting"*

Amiga goes on auto



A new British route planning program is to be released this week.

GB Route provides a road map of the UK to allow any Amiga to print out the quickest way to get from A to B. Publisher Complex Computers reckons its software will be a big hit with thousands of Amiga owners.

Like the successful PC and ST program *Autoroute*, it displays a map of the UK with all motorways and A roads.

"The user types in their starting point and their destination," explained spokesman Mike Stanworth. "The map then displays the best route with junctions highlighted. The time the journey will take, the distance and the cost of petrol will be calculated. And it can easily be altered depending on the speed you travel."

GB Route costs £40. Call 0706 224531. ■

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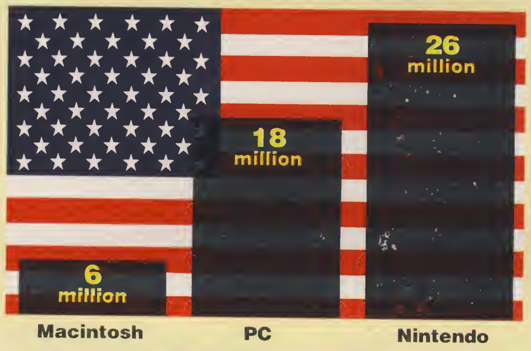
US facts and figures: how they stack up

The big three names in the States as far as computing – and for the sake of argument we mean microchip-based technology – are IBM, Macintosh and Nintendo. Other companies in this vast market are IBM compatible makers such as Tandy, Compaq, and Zenith. In the light of the much smaller UK market both Commodore and Atari sell large amounts of kit. However, across the pond they are relatively small fish. Atari's consoles do well, as does the C64. In fact 1991 looks like being a good year for Commodore US and the continued push for the recently repositioned Amiga.

The three big players are unhappily reticent to provide exact sales figures. As far as we could ascertain, last year America owned a staggering 26 million Nintendo systems, 6 million Macs, and 18 million PCs. Obviously cost is a factor here. With an entry level of Mac Plus coming in at around $1,100 to $1,300 and a PC coming in at $599, the Nintendo at $70 means more sales. However, with Nintendo looking to upgrade its systems with the additions of modems, keyboards and business software, the mere fact that 26 million people know the name could change the US market dramatically in the next decade. ▨



Looking at life from a different angle

Basically the Americans view their computing from an utterly different angle to us Brits. So where do the differences begin? Read on:

● For many years both Apple and IBM have been donating thousands of units to high schools and colleges. The budgets of educational establishments are also vast (Carnegie Mellon, a school of some 6,000 students looks to spend some $15 million plus a year on IT. This is small, a bigger university such as UCLA might spend three times this sum).

This is corporate policy and is far from a charitable operation. The idea backing this up is to get the brand name into the mind as early as possible. Sponsorship is also big business. For example, students wishing to enter one college in New York have to own Zeniths. This means that the present crop of adult computer consumers have been immersed in technology since childhood.

● PRICE: This is a major point and should not be under estimated. A Sega Genesis (Mega Drive) would set you back $189.99 in the US and £189.99 in the UK. A Tandy WP2 would set you back $349.95 in the States and £286.95 in the UK. Add state tax to the price (Georgia is 6 per cent for example) and VAT to the UK price, and then consider that an approximate exchange rate is $1.98 to the pound. This means that US prices come in at just over half what we pay here. Computers, consoles, software and peripherals are far more widely available, and more widely used because they are far cheaper.

● AWARENESS: this leads on from the last two points and is crucial to understanding the US mentality to computers. They are far more blasé about the technology through familiarity. However, the awareness does revolve around the PC or the Mac. Amstrad learnt that lesson after failing to sell the PCW through Sears Roebuck outlets. Commodore and Atari are fighting the, "if it's not a PC or a Mac, it's not a computer" ethos.

● TELECOMMUNICATIONS: making a local call in the States is free. Even long distance calls won't cost an arm and a leg. Consequently more bulletin boards exist, which means more available cheap software. ▨

ONLY IN A

Walk into any US computer store and you'll be bombarded by consoles and shelves and shelves of PC software. Not an Amiga or ST in sight. Could your local shop go this way too?

It used to be said that what the Americans did in December, Europe would do next May. But although America produced the first microcomputer with the kit form Altair in 1975, it took Europe four years to follow on with its own breed of home-grown product – Clive Sinclair's ZX80.

Whereas subsequent Spectrums and BBCs managed to integrate both serious and leisure applications – programming and games – in the US the distinction has always been maintained to a greater degree. The reason lies in the emergence and growth of two of the world's major players in the personal computing market – IBM and Apple.

For following fast on the heels of the Altair came the Apple II with its revolutionary floppy disk drive – this advance meant personal software, personal use and a proliferation of software houses, hardware firms and computing ideas.

Europe was still lagging behind. Even though the idea of computers began to filter over, they were seen as primarily for 'young people'. The first push was made into schools where children were seen as being more capable of taking the 'new technology' on-board. This differed radically from the growing American perception of computers as adult tools or, even as Steve Jobs dreamt, as personal aids which would soon be in every home. However, it was only when the really big money saw the true (financial) value of the personal computer that this American dream began to make the trans-Atlantic trip.

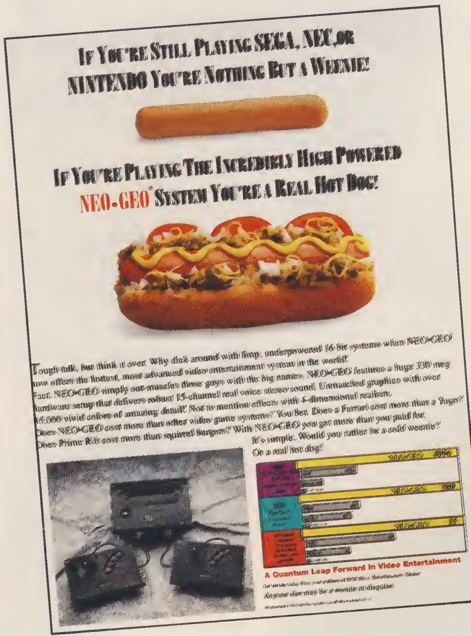
1981 saw the biggest computing company of them all, IBM, move into the home computer market with the PC. Offices which had previously bought mainframes found that they could get more processing and power, and better storage for a fraction of the cost, from linked PCs. Schools did the same. In fact there has long been a policy of donating free computers to educational institutes – get the brand names into their heads young was the idea. IBM moved with speed, and the more people found themselves confronted with the proliferating PC in home and school, the more they equated PC with home computer. It is this machine, along with the Mac, which forms the bedrock of Joe Blow's (the man in the street to you and me) view of what a computer should be.

The Mac is a machine which belongs to the wealthy or to the university. The PC (or IBM as even compatibles such as the Tandy are generically known) is the business and home computer.

However, to the British eye, both of these computers are serious pieces of hardware.

The idea of a games machine is somewhat of an anathema to the average Washingtonian, Philidelphian or Atlantan. If you want to play games then you'd better get yourself a console. At a push you could fork out for a PC game. If you wanted to get more exotic still, you would buy an Amiga. ▨

Console or compute


If You're Still Playing SEGA, NEC, or NINTENDO You're Nothing But a Weenie!
If You're Playing The Incredibly High Powered NEO•GEO® System You're a Real Hot Dog!
NEO•GEO 330
NEO•GEO 15
A Quantum Leap Forward In Video Entertainment
Anyone else may be a weenie in disguise.

Tough talk, but think it over. Why dick around with limp, underpowered 16 bit systems when NEO•GEO now offers the hottest, most advanced video entertainment system in the world! Fact. NEO•GEO simply out-muscles those guys with the big names. NEO•GEO features a huge 330 meg hardware setup that delivers robust 15-channel real voice stereo sound. Unmatched graphics with over 65,000 vivid colors of amazing detail! Not to mention effects with 4-dimensional realism. Does NEO•GEO cost more than other video game systems? You bet. Does a Ferrari cost more than a Yugo? Does Prime Rib cost more than squirrel burgers? With NEO•GEO you get more than you paid for. It's simple. Would you rather be a cold weenie? Or a real hot dog!

• Comparison advertising marks a major US/UK difference. SNK pull no punches in the growing console market.

Ask who the two biggest Stateside names in high-tech are and you will be told IBM and Nintendo. IBM PCs litter offices, homes and schools but are seen as serious computers. If you want to get involved in gameplay with any vigour you buy a console.

An interesting side issue here is the image battle which Commodore and Atari have been fighting. In the average American mind, a computer is a computer and a games machine is a console. The ST and the Amiga are confusing these issues because of their abilities to be both business and leisure to a high level of quality. This double-vision to the machines is being broken down, but it is a slow process.

The console market is far more vibrant in the US than in the UK at the moment. Nintendo products are everywhere. The Gameboy and Nintendo Entertainment System (NES) are what you give little Chuck Jr for Christmas and also to big Chuck Senior for the plane.

The 8-bit market is locked up tight by Nintendo with the NES. Although Sega has recently redesigned its Master System, compacting it and smoothing the lines in order to undercut the NES 8-bit supremacy it is an uphill struggle to a hard battle. Atari also makes a very strong, and historically fairly secure, stand

MERICA...

uter? The US angle

Cross-town traffic and Nintendo's push for power

NINTENDO POWER
VOLUME 16
U.S. $3.50 Canada $4.50
DR. MARIO
Contagious Fun and Challenge!
Don't Miss!
Huge Reviews!
Castlevania III
Solar Jetman
Little Nemo
Player's Poll
Leads to Super Bowl

The name of the game in the States now is cross-over. An English computer user is perfectly at ease with an ST or Amiga as a games machine, word processor, music maker, and business engine. The average American likes, or liked, harder definitions.

The manufacturers, however, mean to change this. The new low cost Macs are a prime example of this. Apple has decided to move out of the classroom, publishing house and design studio, and into the home. This move depends on pricing structures rather than any radical changes to the architecture of the machines themselves.

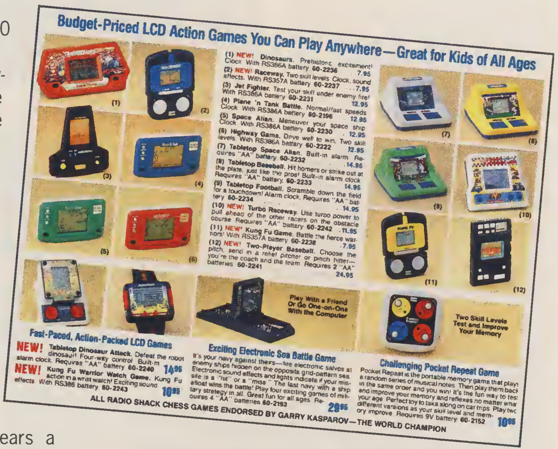
More interesting is the notion proposed by Nintendo and, to a lesser extent by Sega. Nintendo is now seriously intent on turning its consoles into computers, and the market needs educating as such. With over 20 million Nintendo machines in American homes (over 9 million were sold last year alone) and with Mario on television six days a week in his own series, or in bowls every morning with the breakfast cereal, and emblazoned over any other form of marketing you care to mention (*Super Mario 3* is set to be one of the biggest games ever and Nintendo has sold over 5 billion games) market profile is no problem.

The NES system already comes with expansion capacity. A 48-pin computer cable connector is in place (the cable itself is due in the States next year) you will be able to connect keyboards, modems and other peripherals. This will make the 'video' games centre into a fully fledged computer. As David Sheff of *Men's Life* magazine recently commented: "Plug in a phone line and you'll be able to call up movies, reviews, buy pork bellies, do research, make airline reservations... Other interactive computer networks are available (Compuserve, Prodigy) but Nintendo has the power to dwarf them all."

This kind of massive cross-over potential is eagerly awaited by the American end user. And it also looks like excellent news for manufacturers such as Atari with the ST, and Commodore with the with its XE, 7800 and 2600 machines.

In the 16-bit console market however, the Sega Genesis (Mega Drive to us) "sold out the first week we had it. We are very excited about it" said one Atlanta dealer. Nintendo's Famicom, (and new Super Famicom which is due to start shipping in September '91), has not yet taken over the market.

Another machine vying for the market is the TurboGrafx, the 16-bit PC Engine from NEC. In most of the stores we visited this was seen as an excellent machine, but one which lacked the market profile of either Sega or Nintendo. The PC Engine also bears a mention, but only just.


Budget-Priced LCD Action Games You Can Play Anywhere—Great for Kids of All Ages

(1) NEW! Dinosaurs. Prehistoric excitement! Clock With RS366A battery 60-2236 7.95
(2) NEW! Raceway. Two skill levels Clock, sound effects. With RS357A battery 60-2237 7.95
(3) Jet Fighter. Test your skill under enemy fire! With RS366A battery 60-2231 12.95
(4) Plane 'n Tank Battle. Normal/fast speeds Clock With RS386A battery 60-2196 12.95
(5) Space Alien. Maneuver your space ship Clock With RS386A battery 60-2230 12.95
(6) Highway Game. Drive well to win. Two skill levels With RS386A battery 60-2222 12.95
(7) Tabletop Space Alien. Built-in alarm Requires "AA" battery 60-2232 14.95
(8) Tabletop Baseball. Hit homers or strike out at the plate, just like the pros! Built-in alarm clock Requires "AA" battery 60-2233 14.95
(9) Tabletop Football. Scramble down the field for a touchdown! Alarm clock. Requires "AA" battery 60-2234 14.95
(10) NEW! Turbo Raceway. Use turbo power to pull ahead of the other racers on the obstacle course Requires "AA" battery 60-2242 11.95
(11) NEW! Kung Fu Game. Battle the fierce warriors! With RS357A battery 60-2238 7.95
(12) NEW! Two-Player Baseball. Choose the pitch, send in a relief pitcher or pinch hitter—you're the coach and the team. Requires 2 "AA" batteries 60-2241 24.95

Play With a Friend Or Go One-on-One With the Computer

Two Skill Levels Test and Improve Your Memory

Fast-Paced, Action-Packed LCD Games
NEW! Tabletop Dinosaur Attack. Defeat the robot dinosaur! Four-way control. Built-in alarm clock. Requires "AA" battery 60-2240 14.95
NEW! Kung Fu Warrior Watch Game. Kung Fu action in a wrist watch! Exciting sound effects. With RS386 battery 60-2243 10.95

Exciting Electronic Sea Battle Game
It's your navy against theirs—fire electronic salvos at enemy ships hidden on the opposite grid-pattern sea. Electronic sound effects and lights indicate if your missile is a "hit" or a "miss." The last navy with a ship afloat wins the battle! Play four exciting games of military strategy in all. Great fun for all ages. Requires 4 "AA" batteries 60-2193 29.95

Challenging Pocket Repeat Game
Pocket Repeat is the portable memory game that plays a random series of musical notes. Then play them back in the same order and you win! It's the fun way to test and improve your memory and reflexes no matter what your age. Perfect toy to take along on car trips. Play two different versions as your skill level and memory improve. Requires 9V battery 60-2152 10.95

ALL RADIO SHACK CHESS GAMES ENDORSED BY GARRY KASPAROV—THE WORLD CHAMPION

• Compare these prices from Radio Shack with a Tandy catalogue. Remember the exchange rate.

The biggest new product to hit the US in the past few months has been the viciously marketed Neo-Geo from SNK from Japan. These people do not play around and have decided to blast into the arena with hard-hitting comparison advertising.

As for hand-helds, Nintendo's Gameboy is a nose ahead. As for Atari's Lynx the consensus is that you just "can't get the games for it."

The people we talked to – dealers, sales people and 'the person in the street' were looking forward to the official launch of the Sega GameGear, the colour hand-held. NEC is not to be left behind in this fresh market place, its new launch is the TurboExpress colour unit. Unlike the GameGear, the Lynx or the Gameboy which require new cartridges to be bought for them, the TurboExpress will play already existing TurboGrafx games. Finally, the battle has also been joined by the mono Gamate (marketed in this country by Cheetah) and colour PowerPro machines. ▨

A battle at home with its roots in the past

One part of American computing history which differs radically from the UK and Europe is the battle between IBM and Apple.

Although IBM (and more importantly in terms of 'hearts and minds' marketing, IBM compatibles) leads in the home, desktop or personal computer world (depending on how you look at the machine), it wasn't always that way. The corporate battle which saw the evolution of the PC was a hard fought one.

With Apple cutting prices, Nintendo planning on-line computer systems, and European manufacturers eyeing up the States, the battle to get computers in the home is shaping up to be even more so.

Up until the late 1960s computers were seen as monolithic machines, slightly frightening and definitely corporate. The few desktop models which did exists were found on the desks of boffins at MIT. IBM was king, and IBM sold mainframes. It also sold the terminals, peripherals and software to go with them. No one sold personal computers because IBM didn't see the point, or the profit in them.

In the late 60s and early 70s several organisations began on the West coast: the People's Computer Company, and Community Memory which made use of an IBM XDS-940 mainframe and slave terminals (and which folded due to a free-for-all ethic and little funding) began the surge away from corporate computing. The Itty Bitty Machine company and Kentucky Fried Computers were two other groups of highly skilled young people which deviated from the corporate mould. These companies existed for very brief periods and had the sole intention of bringing computing to the person in the street, or rather in the home. The inspiration was frustration. IBM had the know how and the finance to produce home computers, it simply didn't see the profit in them.

Once the young turks on the West coast got moving, change was rapid. The first micro on the market was Altair (1975) which came in kit form and was a huge success. However, it was built by computer-people and aimed at computer people. None of the companies had the punch to reach the public at large.

The technological advances which really lit the fire beneath IBM came from Apple. The floppy disk drive and the stand alone Apple II sold. With the drive came software, software companies, and an escalation in personal computing manufacture.

In 1976, the year before the Apple II launch, Apple made $200,000. The following year profit was $7 million. Other people, Commodore being a prime example, saw that the desktop market was good and moved in. IBM finally saw the light of day and moved into the market in 1980. The IBM PC came in with force, undercutting prices of the independents such as Apple. Advertising was light, humourous (Charlie Chaplin) and strong.

UK v US

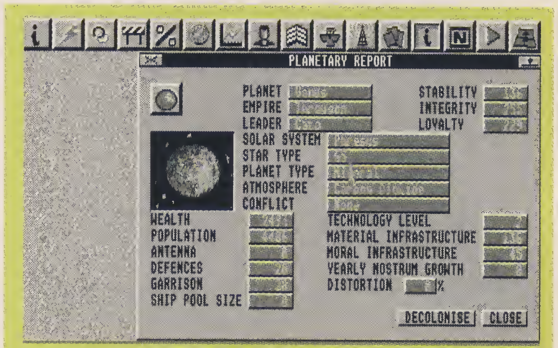
The American view of the UK computing scene changes depending on who you talk to. Ask an Amiga owner and they will tell you that the UK is the land of milk and honey.

As the editor-in-chief of *Amiga World* commented in the December 1990 issue: "(in the UK) Nintendo is not the force it is in the US because the English don't take kindly to wimpy, proprietary games machines." He also commented: "Over here (in the US) the Amiga is often shunned as a 'games machine'. People are ashamed of its great games.... (there is an attitude in the US) that says that if it isn't a PC or a Mac, it isn't a real computer."

Other views are not so complimentary. Students at Atlanta's Georgia Technical College (Georgia Tech in the vernacular) have access not only to several departmental computer rooms, but also to an on-campus computer store. This was definitely serious in intent. The place is littered with new Mac Classics (the boxes spill out into the book-store across the way), IBM compatibles, Panasonic word processors, copies of Lotus *1-2-3*, *Mavis Beacon Teaches Typing*, and much more.

Talking to students, we were given a less rose-tinted view. As to the central question of price it was commented "Well, if you're prepared to pay over the odds, the companies are going to sell at those prices. You can't blame them." European software was viewed as one thing and one thing only: "Games, all we ever seem to see from Europe is games. They are great games, which is why European firms get the rights to *Robocop* and such, but they are still, well, kids stuff".

There is a feeling, albeit not among the power-players, who don't like to talk, that we Europeans are as children with computers. Just like we were at the very beginning. ▨



• **Imperium** – *moving to the PC. A thousand years of fun?*

Emperor for a day

Imperium, the game which puts you in the position of Emperor of Earth (unless contested) with a view to reigning for a thousand years is to be relased on the PC.

A strategy game which involves control of the military, diplomatic and economic options, *Imperium* has already been successful on the ST and Amiga. A windowing environment has been designed for interaction so that PC-using Terran leaders can control subordinates, and build space fleets in order to invade other planets. Aside from staying in power, there is a *Dune*-like subplot which sees the Earthlings searching for Nostrum, the life preserving drug without which you could not hope to last the full thousand years.

Price is £29.99. For more information call publisher Electronic Arts on 0753 49442. ▨

Toaster pops up

VIDEO TOASTER
NEWTEK

Kansas-based NewTek has announced that the Video Toaster add-on board for the Amiga has finally begun shipping.

As we reported in *Express* 101, the curiously named Toaster has been in development for some four years. It enables budding TV producers to create stunning visuals from the comfort of their own desktops. Facilities offered are genlocking, video titling and production switching. All this is available for a fraction of the cost of commonly used dedicated machines.

The system is not yet able to cope with the UK's high resolution PAL television standard; it will only work with NTSC setups.

European telly whizz kids are going to have to wait a little longer or fork out $10 to $50,000 for dedicated machines.

Contact NewTek on 0101-800 843 8934 ▨

Archimedes chip all set for next generation

APPLE AND UP TO FUND

by Andy Storer

In what can only be described as an astonishing move, two of Britain's and America's best known home computer companies, Acorn , manufacturers of the RISC-based Archimedes range, and Apple, producers of the Macintosh range, have announced a joint venture to produce the next generation of Reduced Instruction Set Computing processors.

These are inexpensive, small and powerful chips which consume little power and are ideal for industrial controllers, graphics boards, accelerator cards and portable computers.

Sources suggest Apple's decision to venture into this joint research and development operation is to gain access to the chip technology required for its General Magic spin-off company working on the Z88-style Apple MacSlate project.

A new company to be based in Cambridge (England) – Advanced RISC Machines – has been formed in which both Apple and Acorn will invest £1.6m each. A third partner, VLSI Technology, chip designer and manufacturer, will put forward 5 per cent of the initial £5 million capitalisation with the remainder being sought elsewhere.

Acorn began RISC development in 1983. To date, more than 130,000 ARM chips have been shipped, 100,000 in the Archimedes – making the company second only to Sun with its SPARC range in the worldwide RISC market.

Already, being developed is a notebook computer similar in scope and function to the proposed General Magic machine. Using ARM chips, the Active Book, brainchild of Acorn founder Herman Hauser, is a lightweight portable designed as an on-the-move integrated personal organiser. In the US, Radius use the same processors in its graphics accelerators for the higher-end Macs. It has also been revealed that ICL, Philips and Sanyo, among others, are developing ARM-based products.

Apple, with a revenue of £2.84 billion last year, has been evaluating the Acorn design since 1988. The move is particularly significant in view of reports (see *Express* passim) of Apple's interest in bringing to market a new generation of lightweight, portable machines.

Within minutes of the announcement on 27 November, the new company revealed plans for an ARM 600 processor, running at 20 MIPS, to be unveiled early next year with versions up to a '900' to follow. Within forty-eight hours, Acorn's share price had more than doubled – up from 11p to 25p. For Acorn, the move represents a tremendous boost in credibility and the opportunity to concentrate on

Some general Mac magic

As reported in *Express* 90, Apple announced the formation of its General Magic subsidiary back in July, founded and partly funded by Bill Atkinson, Hypercard's author, and Andy Hertzfield, designer of the Mac's operating system. General Magic's first product will be the MacSlate – essentially a smart keyboard with LCD screen which can be used away from its host machine. Able to accept, edit and output data via modem, the MacSlate will feature a geniunely intuitive front-end and incorporate advanced communications features.

Since the story broke, little has been heard of the project other than a scheduled launch date next summer. Powered by an ARM chip, MacSlate would provide unparalled performance for a notebook while simultaneously offering four times the battery life of competitors.

Amstrad not selling out

Since the confirmation that Amstrad is to abandon Amsoft, its software sales and development arm, rumours have been brewing in the trade of further corporate trimming in the company's computer field.

Trade paper *PC Dealer* recently noted the omission of Amstrad's UK boss, Barry Young, from a list of the company's directors. This was taken as a sign that the company might be considering selling off its PC division. This assumption was firmly corrected by Amstrad PR man Nick Hewer who called it "preposterous".

Hewer told *Express* the following in relation to Amstrad's position in the computer market, and Barry Young's position in Amstrad: "The suggestion that Amstrad is pulling out of computers can, in its mildest form, be described as ludicrous.

"Amstrad is deeply committed to its computer business and will remain so. The new directors designate fulfill functions not already on the main board, they were appointed to Amstrad plc, the holding company, and not specifically Amstrad UK. Barry Young will continue to drive Amstrad UK, the group's biggest subsidiary, forward."

Further to this is speculation that the fax division might also be up for sale. This has been firmly denied. ▨

• *Barry Young: rumours of his departure unfounded.*

Super Famicom draws near

Nintendo has announced plans to ship the Super Famicom (FAMily COMputer) to the USA in September 1991. This brings offical imports of the machine one step closer to the UK.

Orders for the impressively specified games engine have exceeded two million units according to Nintendo. This has meant speeding up factory production with plans for 300,000 Super Famicoms a month from next January. By March this figure is expected to be 500,000. August sees 800,000 units being turned out.

● **See Whole Wired World on page 35 for more on the machine.** ▨

of Macintosh notebook computers

ACORN TEAM RISC CHIPS

designing its Archimedes and R-Series Unix workstation computers rather than chips.

Although both Apple and Acorn refused to be drawn on the intended applications underlying the venture, informed insiders believe the new company's primary aim will be to develop a series of notebook computers based around the ARM chip and marketed under the Apple badge.

A spokesman for ARM would only describe the company's brief as "to address and attack the growing market for low-cost, low-power, high performance, 32-bit RISC chips", adding that ARM would be manufacturing products which included "personal and portable computers, telephones and embedded control uses in consumer and automotive electronics".

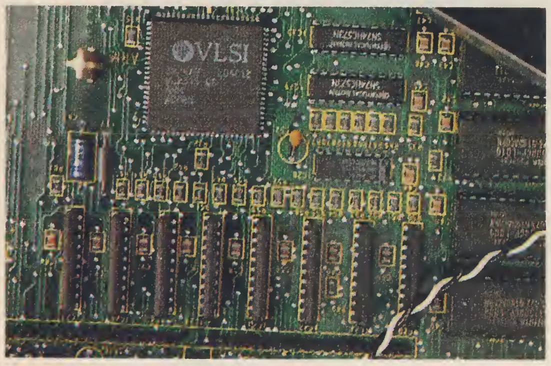
Apple's UK MD, Mike Newton, similarly underplayed the significance of the joint venture by referring to it as an opportunity for Apple to "build on its reputation as an innovator in the personal computing field".

But VLSI's President, James Fiebiger, was more forthcoming, suggesting the ARM will be used "as an embedded controller in laser printers, video compression and communications".

Picking up on this theme, US sources are suggesting Apple will initially use the ARM chip to speed up the performance of its laser printer range, and possibly badge its own accelerators for faster on-screen graphics handling, with launches pencilled in for the January MacWorld. This is given further credence since the ARM chip has a small base of applications software and thus seems unlikely to feature as the main CPU in a desktop machine. Indeed, Apple vice-president Larry Tesler went so far as to say that "Apple had not considered using the ARM and dumping the Motorola 68000 family as the main Macintosh processor."

However, sources closer to the new company insist the deal is much more far-ranging. They point out that the key to future Apple/ARM products lies in the extremely low power consumption of the ARM chip. Hitherto, Apple was believed to be considering adopting Motorola's 88000 and 88110 series of microprocessors – some four times more power-hungry than the ARM. But Tesler did stress the low power consumption of the latter, which is only relevant in portable computing, as being a major factor in Apple's decision to invest.

Apple has a history of investing in high technology companies just before using their key products, for example Adobe and Sybase. Given that Apple has recently formed a spin-off company, General Magic, to produce a notebook computer, it would appear the timing of the join venture is more than mere coincidence. ▨



• *The ARM chip – designed by Acorn and manufactured by VLS.*

• *Hypermedia – aimed at educating.*

Japanese kids' FM

Fujitsu has decided to target a new configuration of its FM Towns multimedia machines at educational establishments in Japan.

The two new setups are the SH and the SF. Both machines use the 80386 processors running at 16MHz. They use single CD-ROM drives as well as two floppy drives. RAM is 2Mb as standard, and with the Towns' system software comes the ability to run 'Hypermedia' software. The only difference between the two systems is that the SH has a built in 40Mb hard drive while the SF does not.

The educational angle is covered by new software which includes an integrated suite of word processor, spreadsheet and database called *School-Carda*. There is also a package called *School-Acea* which is said to be able to fully utilise the power of the machine to ehance learning materials.

It is not known when or if a UK launch is planned for the machines. ▨

Lotus get together

Users of Lotus *1-2-3* need never feel alone again. Lotus Development (UK) has recently announced an upgrade to the networked version of its graphic spreadsheet.

Release 3.1 runs under DOS and Windows and offers user to the ability to incorporate the software across local area networks (LANs).

There are three versions of the new system. Standard is already released and able to run on stand-alone systems, Server runs from a central network file server and also comes with various administrative software and Node is basically the expansion pack which allows additional terminals to be added.

Networking systems catered for include IBM PC Lan 1.2, 3Com 3+Share 1.6, Novell Advanced, and Bunyan Vines 3.1 among others.

Owners of Node or Standard version 3 can look to a free upgrade until 31 December.

For more information call 0784 455445. ▨

Norma service is resumed

• *A kitten.*

• *Prime Minister John Major.*

What is the connection between a cute kitten, Acorn computers, and the prime minister of the UK? Simple, it's his wife.

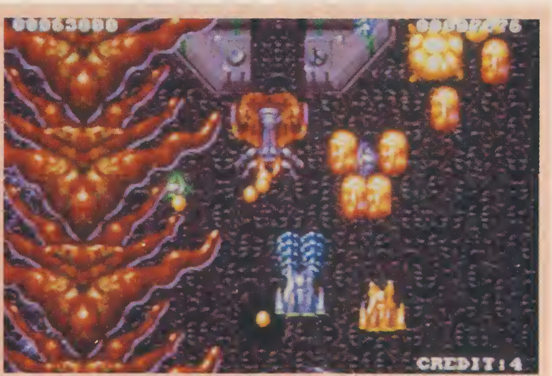
Norma Major recently presented 12 schools with BBC A3000 computers and colour monitors as prizes in the National Pet Week Acorn School's challenge. A different woman in those days, Mrs Major was a mere chancellor's spouse.

Acorn put up £8,000 worth of prizes for the nationwide school's quiz. National Pet Week was run by Wood Green Animal Shelters in order to "Educate young people on a wide range of animal related subjects." ▨

Chocks away

Want to wipe out a few aliens? Of course you do, and if you own a Sega Mega Drive you have yet another chance with the latest 16-bit console release from Electronic Arts. *Battle Squadron* sees you as a squadron leader flying your Delta Cruiser. You have wipe out the evil forces of Barrax (well they must be evil musn't they) both on the ground and in the air, from the beleaguered planet of Terrania. As you're a good guy you also have to rescue two of your pals.

The game comes to the Mega Drive from the Amiga. It costs £39.99. Call 0753 49442.



• *Red five I'm going in!* Battle Squadron *is released for the Mega Drive.*

Amiga and ST owners need not feel left out as a new game is coming to them from the C64. *Insects in Space* is the gruesome sounding title of the shoot-'em-up from Hewson. You play St Helen Bak, Arch Leader or the Motherhood, you have laser-powered eyes and a mission. Fight killer bees, save the world. Price is £24.99. Call 081-752 0260. ▨

Marking time

• *Panaboard – from challk to printout.*

The days of copying long pieces of text from the blackboard, or at least pretending to, are numbered. Panasonic has just announced a new 'whiteboard' system which allows the writing on the wall to be copied electronically to paper.

The new KX-B520 Panaboard is a twin-screen system which makes use of 100 metre rolls of thermal paper, the same kind used for fax machines. The printing device is located below the whiteboard and outputs at 200dpi, there's also a built in guillotine.

All the user has to do is write away as usual, then hit a button and bingo! Print-outs galore.

Price is £995. For more information call 0334 853401. ■

FAST faces new battle 18 months after a

£70K PIRATED SEIZED IN SCO

The Federation Against Software Theft (FAST) is currently waiting to hear whether the seizure of an estimated £70,000 worth of pirated software in Glasgow's Barrowlands market will lead to a successful prosecution.

The recent raid involved the Glasgow constabulary, representatives from FAST member companies, and the Strathclyde Trading Standards Authority.

According to Bob Hay of FAST all of the software seized was "disk based". He continued: "We have not yet fully evaluated what software was pirated or exactly what the value was."

Asked what retribution the alleged criminals might suffer, Mr Hay told us: "Under section 107 of the 1988 Copyright, Design and Patents Act they could be looking at an unlimited fine and up to two year imprisonment." When asked where the initial tip-off came from he was unable to comment as the case is sub judice.

This is the lastest chapter in FAST's battle against illegal traders at Barrowlands. Bob Hay explained: "We first became aware of software piracy in Glasgow four years ago". Since then a number of complaints have been passed from FAST to the local Glasgow Trading Standards office relating to what was rapidly becoming a rash of blatent software piracy and sales at the notorious Glaswegian market (see *Express* 40).

Over 18 months ago one such complaint looked as if it would finally result in a successful prosecution. However, the watchdog organisation was astonished to see a nearly water-tight case relating to £200,000 worth of pirated programs thrown out of the Scottish legal system.

The reason for this appears to be that a Procurator Fiscal Depute (roughly equivalent under the Roman-based Scottish legal system to a local English chief magistrate) decided that the weight of paperwork which would have ensued from a full prosecution was too much for the Procurator's office to handle.

Well narked

We all know that drugs are bad for you. Nancy Reagan's answer to the problem was to say "No!". Software house, Dinamic's is to develop a junk-busting new game called *Narco Police*.

The game is said to use "hyper-realistic 3D" as well as a "graphical animation technique that ensures high resolution no matter how close you get to objects."

In its heart of hearts *Narco Police* is a shoot-'em-up combined with an element of strategy. You are one of the good guys sent to a mysterious island in order to crack – no pun intended – an evil drug cartel. You get your choice of weapon, as well as a host of attack routes. To help, or hinder, your anti-drug mission there are teleporter systems, medical kits and a computer terminal.

The Amiga version uses 2Mb of compressed graphics, sound and music. Price for Amiga, ST and PC versions is £24.99. 8-Bit versions are due out next year.

Call 081-752 0260. ■

Feeling Dizzy?

Three new compilations of several old games are heading Christmas stockingwards. Both are from Codemasters.

The first two go under the already successful Quattro banner. *Quattro Sports* contains *BMX Simulator, Italia 1990, Advanced Ski Simulator*, and *Pro Tennis Simulator*. *Quattro Arcade* comes with *Pro Powerboat Simulator, SAS Combat Simulator, Pub Trivia*, and *Nitro Boost*.

For the cute of heart, the Coders have decided to bundle all the Dizzy games in one pack: *Dizzy, Fantasy World Dizzy, Treasure Island Dizzy, Fast Food* and a new adventure called *Magic Land Dizzy*.

• *Quattro sporty simulations.*

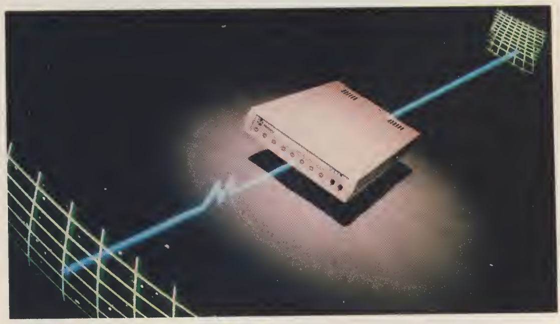
The Quattro series are available for the ST and Amiga at £12.99. Dizzy goes to the Spectrum, C64, and CPC and costs £9.99. ■

Intelligent move for Mercury

BT might be making stonkingly vast profits, but Mercury is not to be left behind. It has just announced a networking package and launched a new modem.

The new Mercury DataComs Ltd deal is business oriented; the subsidiary company will build LANs, and WANs (Wide Area Networks).

Voice and data integrated systems are also offered as are message switching devices – like the one which tell that the number you have been calling has changed, in a voice like R2D2. If you only want to discuss the feasability of such systems, DataComs also offers consultancy.



• *The new V32 modem from Mercury.*

The new modem, the Mercury V32, follows the recent trend toward 'intelligent' machines. As its name suggests, the modem provides the latest V32 standard. It also comes equipped to handle the most up-to-date data compression system, V42bis.

Price for the V32 modem is £895.

For more information on this, and the modem call 0483 7209819. ■

The eyes have it

Almost one in three VDU workers suffer from eyestrain, tiredness or pains in back, shoulder or head, according to a Gallup survey published recently.

The survey on the introduction of visual display units found that working conditions in many offices fall below European Community (EC) standards.

More than half of those questioned said the lighting in their offices had not been changed since the introduction of VDUs, and more than a quarter complained about glare and reflection making it difficult to read screens.

Commenting on the survey, trade union leader Brenda Dean, said that too many employers are still unaware of an EC directive which requires new VDU screens to be free of glare and reflections by the end of 1992.

The directive also sets rules for the design of work areas, types of screens and eye tests for VDU workers. Employers might have to pay for eye tests as they are no longer free under the NHS, but Ms Dean warned: "Employers must not wait until 1992". ■

£200,000 watertight case was thrown out

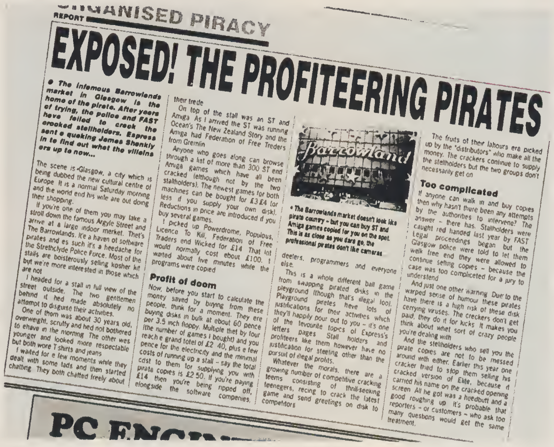
ED SOFTWARE
COTTISH BUST

This conflicts with reports at the time that the case was "too complicated for a jury to understand".

Doubly galling for FAST was that when the dead case was taken to the Lord Advocate (the highest legal authority in Scotland), he saw no reason for it to have been dropped in the first place.

Although it looks hopeful that the latest Barrowlands bust will lead to a conviction, FAST is still at the mercy of the Scottish judiciary. The case continues. ■

- Make sure you read the first of a two-part *Express* piracy debate with Haydn Fitz-Williams next week. ■



REPORT ORGANISED PIRACY

EXPOSED! THE PROFITEERING PIRATES

• The infamous Barrowlands market in Glasgow is the home of the pirate. After years of trying, the police and FAST have failed to crack the crooked stallholders. Express sent a quaking James Shenkly in to find out what the villains are up to now...

The scene is Glasgow, a city which is being dubbed the new cultural centre of Europe. It is a normal Saturday morning and the world and his wife are out doing their shopping.

If you're one of them you may take a stroll down the famous Argyle Street and arrive at a large indoor market. That's The Barrowlands. It's a haven of software pirates and as such it's a headache for the Strathclyde Police Force. Most of the stalls are boisterously selling kosher kit but we're more interested in those which are not.

I headed for a stall in full view of the street outside. The two gentlemen behind it had made absolutely no attempt to disguise their activities.

One of them was about 30 years old, overweight, scruffy and had not bothered to shave in the morning. The other was younger and looked more respectable but both wore T shirts and jeans.

I waited for a few moments while they dealt with some lads and then started chatting. They both chatted freely about their trade.

On top of the stall was an ST and Amiga. As I arrived the ST was running Ocean's The New Zealand Story and the Amiga had Federation of Free Traders from Gremlin.

Anyone who goes along can browse through a list of more than 300 ST and Amiga games which have all been cracked (although not by the two stallholders). The newest games for both machines can be bought for £3-£4 (or less if you supply your own disk). Reductions in price are introduced if you buy several games.

I picked up Powerdrome, Populous, Licence To Kill, Federation of Free Traders and Wicked for £14. That lot would normally cost about £100. I waited about five minutes while the programs were copied.

Profit of doom

Now, before you start to calculate the money saved by buying from these people, think for a moment. They are buying disks in bulk at about 60 pence per 3.5 inch floppy. Multiple that by four (the number of games I bought) and you reach a grand total of £2.40, plus a few pence for the electricity and the minimal costs of running up a stall – say the total cost to them for supplying you with pirate copies is £2.50. If you're paying £14 then you're being ripped off, alongside the software companies, dealers, programmers and everyone else.

This is a whole different ball game from swapping pirated disks in the playground (though that's illegal too). Playground pirates have lots of justifications for their activities which they'll happily pour out to you – it's one of the favourite topics of Express's letters pages. Stall holders and profiteers like them however have no justification for stealing other than the pursuit of illegal profits.

Whatever the morals, there are a growing number of competitive cracking teams consisting of thrill-seeking teenagers, racing to crack the latest game and send greetings on disk to competitors.

• The Barrowlands market doesn't look like pirate country – but you can buy ST and Amiga games copied for you on the spot. This is as close as you dare go, the professional pirates don't like cameras

The fruits of their labours are picked up by the "distributors" who make all the money. The crackers continue to supply the stallholders but the two groups don't necessarily get on.

Too complicated

If anyone can walk in and buy copies then why hasn't there been any attempts by the authorities to intervene? The answer – there has. Stallholders were caught red handed last year by FAST. Legal proceedings began but the Glasgow police were told to let them walk free and they were allowed to continue selling copies – because the case was too complicated for a jury to understand.

And just one other warning. Due to the warped sense of humour these pirates have there is a high risk of these disk carrying viruses. The crackers don't get paid, they do it for kicks. It makes you think about what sort of crazy people you're dealing with.

And the stallholders who sell you the pirate copies are not to be messed around with either. Earlier this year one cracker tried to stop them selling his cracked version of Elite, because it carried his name on the cracked opening screen. All he got was a headbutt and a good roughing up. It's probable that reporters – or customers – who ask too many questions would get the same treatment.

PC ENG

• Express exposes pirates last year

Oh what Joy!

• Joystick tidings this Christmas with a new range of American made wagglers.

A new range of joysticks and PC game cards is to be marketed in the UK. Active Sales and Marketing has just clinched a deal with American A Dan Ltd. The range should be hitting the shops just in time for Santa to put them in his sack.

The products go under the umbrella title of Champ and the range includes dual port cards for the PC, yokes for the C64 and Amiga, and a 'control deck' for the 16-Bit Sega Megadrive, among other handy waggling tools.

For more information and prices call Active on 081-752 0260. ■

Company IT confusion

Company directors are confused about what is the best IT strategy to adopt for their businesses, a survey by the Institute of Directors (IOD) revealed recently.

"Directors are still not at ease with IT decision making process," said John Harper, Head of Professional Development at the IOD.

The IOD's survey, sent to 2,000 directors, showed that managers were more concerned with keeping control over computer strategy, than "... understanding the system and finding the right advice". Appointing a specialist director received the lowest rating of all.

John Harper added: "If there is to be no specialist, a good level of IT knowledge amongst management is fundamental."

Directors' main concerns included worries about software and support systems, together with recouping their investments, but monitoring spending was lower down on the priority list. ■

Hacking the hacks

• Paxman – furious

What with politics suddenly becoming 'media attractive' again it seems that the TV presenters are as newsworthy as the people they interview. This obviously went through the mind of one BBC employee who lifted the salary details about celebrities from a BBC mainframe.

The culprit hacked into the system to disclose that presenters John Snow and Jeremy Paxman, of *Newsnight*, were each earning £150,000 pa. This is not strictly true.

The BBC press office said: "There was no hack. The person responsible for the disclosures already had access to the computer." This hasn't cheered either newsmen, in fact Mr Paxman is said to be "furious".

When we asked a spokesperson for BBC News and Current Affairs what action had been taken against the inquisitive hacker, we were told: "He has not been sacked, nor disciplined. He has been given a severe talking to". It is not known what other details were downloaded from the computer, nor what measures the BBC are taking to stop a reoccurrence of the mishap. ■

Lapping up the laptop

Manchester based Sharp Electronics has launched a new laptop PC. Romantically titled the PC-5741, the machine uses a 80386SX processor running at 20MHz.

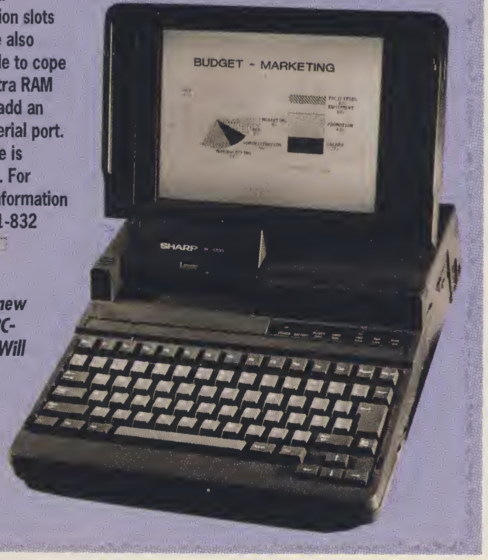
Its 'paper white' VGA quality supertwist LCD screen supports all major PC graphic standards. Screen resolution is 640x480 pixels and it offers 16 grey scales.

RAM is 2Mb as standard although this is expandable to a highly respectable 12Mb. Data storage is in the form of one 1.44Mb 3.5-inch floppy drive, and an internal 40Mb hard disk. The whole lot weighs in at 6.3kg. It is 306mm wide, 363mm deep and 85mm high.

Expansion, and communication with the outside world are obtained via five external ports in the form of standard RS232c, Centronics/Parallel to handle printer output or additional floppy drives, an external keyboard port compatible with IBM PS/2 keyboards and two CRT interfaces one of which is digital and one analogue.

There is also a socket for an external 80387 math co-processor. Three external expansion slots can are also available to cope with extra RAM and to add an extra serial port.

Price is £3,595. For more information call 061-832 6003. ■



• The new Sharp PC-5741. Will you lap it up?

Bull in Pole opinion

French computer group Bull is embroiled in an inquiry about a $30 million Polish government contract.

Bull agreed to provide the Polish Finance Ministry with 367 Unix-base DPS2 minicomputers and more than 5,000 terminals. This is a huge investment for Poland, which has little hard currency. However, rumours of government level price fixing and electioneering are rife.

Bull has been criticised after a Solidarity backed newspaper, *Tygodnik Solidarnosc* reported that IBM had made a $6million lower tender. Specialist newsletter *Eastern European Markets* reported that the secrect police (the UOR) had interrogated the director general of the Finance Ministry about the deal.

IBM is said to be "furious" about the affair. A spokesman for Bull returned fire saying that its bid "had been backed by Solidarity" but that "...other companies were backed by the Nomanklatura." (A group of ex-communist party members.) ICL was unavailable for comment.

Bull further claims that the contract has become an issue in the Polish elections. A spokesman for the group, which recently announced 5,000 redundancies world wide, said: "Bull is the victim of politics". ■

THE WEEK IN VIEW

Will Nintendo repeat its overwhelming American success in the UK? Mark Smith, Editor of Club Nintendo, has no doubts ...

Ask a Man. United supporter if they could win a cup this season and the answer will generally be 'of course'. Ask them if they definitely will win one and the answer will be a little less positive.

With all of the major support behind the Nintendo Entertainment System it appears that it will be impossible for it to fail.

Sales are ten times the level they were last year – the 'hands on in store' feature was one of the major factors of the US success and undoubtedly won over a number of new purchasers.

Hand picked titles, such as *Batman, Robocop, Mega Man 2* and forthcoming *Disney Game Packs*, are constantly attracting first time buyers, as well as gaining continuous support from existing owners. With a high profile in most high street stores, you would have to live in the Outer Hebrides not to have seen the Nintendo. And then there are the Turtles!

With the *Teenage Mutant Hero Turtles*, Nintendo has combined two phenomena – that of the re-born video game console, and the heroes in a half shell – and have come up with an unbeatable winner.

All over the country Dixons, Boots, Woolworths, Menzies and other chain stores are reporting Nintendo to be selling like hotcakes. And once they have the system, the consumer support is second to none – the free *Club NIntendo Magazine*, game and consumer helplines and a host of other services help keep interest running high. Add the high quality games that are regularly released, plus the current wealth of titles available, and you are looking at hundreds of thousands of satisfied customers.

This is all serious, no-nonsense business. Bandai UK is putting its heart and soul into the Nintendo Entertainment System, with the heaviest advertising spend in the console sector. You may say the same for Virgin Mastertronic, which is doing a fine job in the independents and computer field. The difference lies in the marketing – Nintendo is aiming for every young person in the UK rather than concentrating mainly on the smaller market of current computer owners. And, if sales are anything to go by, it isn't doing too badly. ■

> **" Nintendo is aiming for every young person in the UK... and if sales are anything to go by it isn't doing too badly. "**

Express Access

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PUBLISHER • Graeme Kidd
ABC audited circulation January-June 1990:
21,251 copies per week

We regret we cannot enter into any personal correspondence. Technical enquiries should be addressed to Tech Tips at the address below.

While every care is taken in the preparation of *New Computer Express*, Future Publishing cannot be held responsible for the consequences of any errors that may occur.

© Future Publishing Ltd • 30 Monmouth Street, Bath BA1 2BW • Tel: 0225 442244 • Fax: 0225 446019 • Subscriptions: The Old Barn, Somerton, Somerset (0458) 74011

• Printed by Redwood Press, Melksham, Wilts
• Distributed in UK and Eire by MMC Ltd (0483 211222), rest of world by Comag (0895 444055)

COMING NEXT THURSDAY

Best of the BBs
Express picks the top ten on-line systems in the UK

Spectacular Crimes
We interview the man who's business is busting the hackers

Hoist the Jolly Roger
The first in a two-part special on software piracy

PLUS
- Hot news
- Front End
- Games Week
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■ SAM sense

I am a Coupé owner, I know you said you wouldn't print any more letters, but I'm not going to go whingeing, so you can stop sizing up the angle of projection from your desktop to the waste-paper basket.

I am not particularly bothered about the loss of the SAM column from your magazine. Indeed, I consider myself lucky that Robin Alway no longer has to print the same stuff every single week just to fill a column. To say that it was getting boring would be a gross understatement.

What I do object to, however, is your coverage of the machine in your news columns and letters pages.

The news has been inaccurate (Super Spectrum? What are you saying?) and sensationalist.

Your letters page, only a week before MGT announced its own receivership, recommended the Coupé to a Spectrum owner who wanted to upgrade. Now you tell us that the machine is not going to be a hit and not worth buying (which advice will probably cause the sales to drop even more).

Now correct me If I'm wrong, but isn't that called a contradiction? The machine is still exactly the same, it's still getting exactly the same software support as it was when you recommended it, and it now has (what I consider to be) a better company at its head than before.

OK, so the sales aren't going to hit 70,000 this Christmas. That doesn't mean that the computer isn't worth owning.

So please stop this apparent (notice apparent) bias against a machine that seems to have more users capable of writing sensible letters than any other (apart from the PC, of course. I do enjoy lolo Davidson's lengthy technical epistles). All Amiga owners seem to be saying that their machine is capable of more than just games (honest), whereas the ST owners all say that their machine is used by all the serious studios for MIDI and therefore must be better.

Why can't people be happy with the machine they have and leave everyone else the same privilege.

Maybe I'll start a 'My Computer Has More Educated Users Than Yours' debate...

Geoff Winkless, Leicester.

Did I ever say that the Coupé was not worth buying? No I didn't. And I'm still waiting for a flood of recorded delivery packages from all those people who are launching SAM products. So far, zilch, although a chap called Sean Bernard wrote to say that GM Software is apparently about to release a database that runs on the Coupé ... anyone who wants more details should write to Gary Thomas at 48 Main Road, Cryant, Neath SA10 8NP **H F-W**

■ ST User scare?

With regards to you story in *Express* 107 and in the interests of total objectivity, I'd like to point out that the cover disk for *ST User* was not the first cover disk to be virus infected (and probably won't be the last). The first one that I encountered was given away by one of *Express*'s sister publications – *ST Format* (disk 8).

Of course I know I would be cynical to think that you gave no coverage to that little episode because *ST Format* and *Express* are both Future publications. I would never suggest such a thing. Perish the thought.

There's no doubt about that *ST Format* disk being infected, though; it was the first disk to go into my ST that day, and went straight from its sealed bag to the drive. Instead of the usual icon display, I was presented with a screen entirely blank except for the single word 'Hello' up in the top left corner. Nothing I could do would bring up the desktop.

I didn't write in because it wasn't any big deal. I switched off my ST, loaded up *Fastcopy* and copied the infected disk. I then killed the virus on the copy. No data was lost.

Interestingly, the only virus killer that would do the job was the one that was given away on that self-same infected disk, written by MUG UK. And when I inspected the virus in the killer, I found the name 'MUG UK'. Peculiar, I thought.

I couldn't bring myself to kill the original little horror. It was so cute, saying 'Hello' all by itself up there on the screen. I keep it as a pet now, in a little plastic bag.

I know that not all the *ST Format* disks for that issue were infected. Makes you wonder, though, doesn't it? I suppose that after all those paranoid rumblings about software publishes building in viruses as copy-protection, now we'll have time to consider the possibility of rival magazine publishers infiltrating one another's ranks to infect the competition's cover disks!

Roger Pile, Ilogan, Cornwall

You came so close to winning a fiver, there Roger. For the person who used the word 'though' the most times in a single letter. Then I changed my mind because you were wrong on so many counts.

That was no virus on *ST Format* 8's cover disk. According to the boys on that particular *Format*, they didn't receive a single letter from a reader claiming the disk was infected. Maybe you didn't do quite what you said you did... or maybe some cruel prankster sneaked down to the newsagent and 'swapped' disks on the cover of the copy you bought.

You see, MUG allows you to write to the boot sector of a disk as one of its options. You (or that cruel prankster) must have used MUG to write 'Hello' to the boot sector of the disk you popped into your drive. Which accounts for that 'MUG UK' message you found when you used MUG to have a look and see what was going on.

And just to puncture your cynicism, the first magazine to distribute a virus on its disk was another Future title – *MacPublishing*. But that was a brand new virus, one that arrived from America and slipped through the net because the UK virus checkers weren't as up-to-date as they could have been. So there.

Now an addendum to the *ST User* story: despite what you might have read

■ Space cadet answers the ASTRID mystery . . .

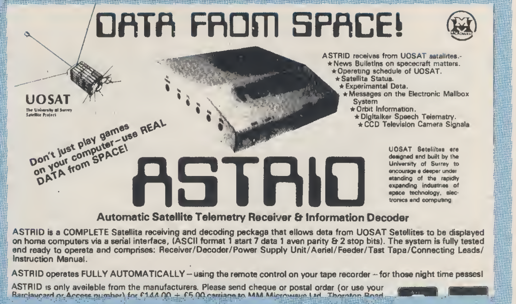
A few issues ago, one of your readers wrote asking about ASTRID. I may be able to offer some information, though it could be a different ASTRID.

Whilst moving my collection of vintage Speccy mags, I came across a half page black and white advert for ASTRID in the issue 20 (November 1985) of the sadly missed *Your Spectrum* (where are Kevin Cox and Peter Shaw now?). The advert is for the Automatic Satellite Telemetry Receiver and Information Decoder, and was being sold by MM Microwave Ltd of North Yorkshire. The device received various data (news, CCD TV signals, experimental data) from UOSAT satellites.

It was advertised to operate on home computers via a serial interface, using ASCII format (1 start, 7 data, 1 even parity and 2 stop bits). The equipment was selling for £144 complete with the receiver, decoder, power supply, aerial, feeder (?), test software, connections and an instruction manual.

I hope this can help the person who wrote in.

Kenny Anderson, Dunfermline, Fife.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• *The original ASTRID ad from 1985.*

Thank you Kenny. To return the favour, Kevin Cox (who they used to call 'Kippers' in *YS* days for some reason...) now works for Future as the Publisher of magazines such as *8000 Plus*, *PC Plus* and *Classic CD*, while Peter Shaw has moved from the world of the Speccy to the world of the Macintosh. He works for a company called Computers Unlimited and has just written an article for another Future magazine: *MacPublishing*. Small world, isn't it? **H F-W** elsewhere, the Green Goblin virus was first discovered in April 1989 – on the 3rd if you want to be precise – and it can do harm to software. If you play a game from a disk that is not write protected when GG is resident in your ST, then it's probably cheerio to your game – Green Goblin will write itself to the disk's boot sector.

The moral of the story is: whenever, and I mean whenever, you use a cover-mounted disk always take a back up first, and always have the write protect tab on the cover disk and any other disks you insert before turning the machine off again. H F-W

■ Legal maze

Further to the letter from Michael Kirk in issue 107 requesting information regarding the availability of *MIDI-MAZE* by Hybrid Arts.

If, as you state, this is no longer available from the publisher and no one is willing to sell Michael their one and only master copy, what is morally wrong with somebody supplying him with a copy?

I know what the law states, but this is more frequently seen to be "an ass". In my opinion, the publisher has morally ceded his inalienable rights to the copyright by ceasing to market the product and I for one would have no reservations about letting him have a copy (if I had one).

I wonder what the opinions of your readers are on this subject.

Donald Hancock, Kenilworth, Warwickshire.

Just because you stop marketing a product, doesn't mean it becomes part of the public domain, Donald. For all you know, Hybrid Arts or the author of the game may be holding on to their copyright with a view to a budget re-launch or compilation. To my mind, all piracy is theft – but if anyone out there thinks differently, drop me a line... H F-W

■ In Paradise...

I've been the loyal owner of an ST520FM for over three years now and had managed to get around a lot of the pitfalls of the computer world. I thought I was at last immune from any more disheartening conflicts with mail order firms which decide to send ordered goods in order of precedence of how much you spend and how you pay. I'm sure many of your readers will sympathise and reflect on this ordeal.

A friend, realising my plight, said unto me: 'Here, take a look at this', and passed me a small but neat booklet. "Strange design – a goat?", I though as I read the cover, "Paradise Computers", it read, "never heard of them!"

The list of PD inside was staggering, it had everything I wanted in a very readable form, so I decided to test them out. In just FOUR days I'd received my order and that includes waiting for a cheque to clear! With the order, I received a new order form and catalogue.

What grabbed my attention, being a morally-structured student, was the fact that they are dispensing with the usual novelties and instead are donating money to charity with each order. Great stuff! As far as I know, they are the first and only PD library to do this. On reading the catalogue, I also noticed that they run a club called rather aesthetically, the Paradise Club, where members can receive discounts and even faster service.

I thought these guys must be a few sandwiches short of a picnic, to give PD away for such a low price so I wrote to Neil Slater (the Boss man) of Paradise Computers enquiring about membership (a mere £6 a year) and not only received a special speedy service, discount accessories and free catalogues, but a free head cleaner and the offer of a help service. What nice people! Either they've been sniffing too many Pritt sticks or they have a large generosity gland. I prefer to believe the latter.

Geoff Furlong, Hendrefoilan, Swansea.

Many more letters like this, and I'll start getting really cynical, lying in wait for letters from friends and relatives of mail-order company bosses! Still, the Season of Goodwill is nearly upon us... H F-W

■ Art attack

I am an ST user of long standing, but after constant bombardment from all the press and after reading many of the 'MCIBTYC' arguments, I started to believe that the Amiga was the best thing to happen to the art world since the Sistine Chapel. So with the readies in my hot little hand I went out and bought myself this paragon of virtue (an Amiga).

Eagerly I took it home, plugged in my newly acquired copy of *D Paint III* and sat down to produce a masterpiece. Twelve hours later I sat back and viewed said masterpiece, only to be totally disillusioned by the resolution achieved. (Enhanced graphics, where?)

OK, so there are more pixels on the screen, but on the other hand they cover more of the screen – so the result is a resolution no better than my trusty old ST. After having had my Amiga for three months, the joy of ownership has turned to abject misery.

I now realise the Amiga is a computer of many parts; that is the keyboard the modulator and the transformer which makes for a very untidy workstation. It has made crashing into an art form, and the disk drive is so delicate it often balks at formatting disks which the ST finds no trouble with. It often blames software for crashing when it is obvious that hardware is the problem. It multi-tasks, great! But, only as long as it only has one thing to do at a time.

My ST has now regained its position of pride of place and the Amiga has assumed its true role as a games machine. In hindsight I wish I had spent the money on an upgrade for my ST and used the change to buy some seat covers for my van.

This leaves me in the unenviable position of saying that 'My Computer Is Better Than My Computer'.

John Preston, Tunstall, Stoke on Trent.

Just goes to show how dangerous the 'MCIBTYC' debate can be, John.

However, your plight appeals to my sense of pity – anyone suffering from the My Computer Is Better Than My Computer complaint, compounded by a van with very cold seats at this time of year, certainly deserves a fiver. Call me Captain Cash if you like, but here's your dosh! H F-W

■ 8-bits missing...

After watching the recent Commodore advertisements on the box, it is interesting to see that Commodore seems to be the only hardware manufacturer to show any interest in its 8-bit computer range and the user base – the CBM 64 and GS64. Although you wouldn't have thought it if you had paid a visit to the Commodore Christmas Show: it was 99.9 per cent 16-bit based. You were hard pushed to find any exhibitor supporting the C64 with software, although there were a few stands selling the C64 pack/console. The Commodore Christmas show reminded me of the Atari '90 show, that, too, was 99.9 per cent 16-bit based.

Mr Carmel Andrews, London

My next correspondent had a different view of the same event....

■ Hall too small

Come on Commodore – you say how big the Amiga/C64 market is, give us the space that reflects this.

I don't know about the Friday or Saturday, but the Commodore Christmas show was packed on the Sunday. If you thought the queue for the Ark was twitchy, you should have seen this one!

My brother and I turned the corner and BAM! – two hours after opening time and the queue was heading for Hammersmith tube station. We're in for a long wait, we thought. What was happening was that the security men were only letting in the amount of people who left – from time to time, twenty or so people in front of us were let in. Eventually, my brother and I got in and got what we wanted, then over the tannoy there was an appeal for people to leave – we left within an hour of entering and the queue outside was, if anything, longer.

Gregor Houghton, Fratton, Portsmouth

It certainly was a fair old trek up from Portsmouth for an hour inside the show Gregor, but it seems that you achieved what you wanted.

It's always difficult for show organisers to get things absolutely right – I remember the same thing happening at the Shopper Show last year, which is why this year's show is at a much larger venue. Hopefully, we can all look forward to a much bigger and better Commodore show next year. H F-W

MAIL SHORTS

■ Seal of approval?

I spotted something very interesting on yesterday's *Challenge Anneka* TV programme. The challenge was to build a pool for the abandoned seals and officially open it.

As part of the opening a plaque was to be unveiled and the bloke who delivered it was wearing a *Shadow of the Beast* T-shirt! Has Psygnosis been bribing the BBC into giving it peak-viewing time advertisements.

P. McCarthy, Alcester, Warwickshire.

No, just demonstrating how eminently sensible it is for software houses to give away promotional T-shirts! Have a fiver for being so eagle-eyed. Keep these TV sightings coming in, folks... H F-W

■ Micro dead

Adding to Tim Gowen's comments about TV programmes, wasn't *4 Computer Buffs* a good show? I never liked *Micro Live* because it was far too biased. It seems as if neither the BBC nor ITV can make a good programme about computers.

Jack Young, Southend-on-Sea

PS My custom built RS232 lead with MIDI adapter is better than yours

It'll never catch on you know. The 'MCRLWMAIBTYCRLWMI' debate, that is... H F-W

■ Level-headed

I would like to add an observation to the ST vs Amiga debate: those who support one machine and criticise the other may be missing the point that the simultaneous presence of these two very similar machines has provided a healthy atmosphere of competition throughout the industry. This competition has ensured that Atari and Commodore and third party manufacturers of software and hardware are kept on their toes, developing and improving on their products.

Without either machine it is highly likely the public would have to pay a much higher price for the remaining product and accept a much slower rate of software and hardware development.

Phillip Beed, Lee on the Solent, Hants

Exactly, as the lad in the Accrington Stanly advert said. Without the continual impetus to innovate, the market would stagnate, and we'd all still be playing games on the Commodore Pet or trying to word process on the Oric.

Until next week, dear readers... H F-W

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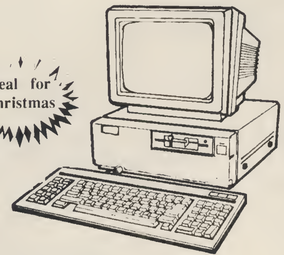

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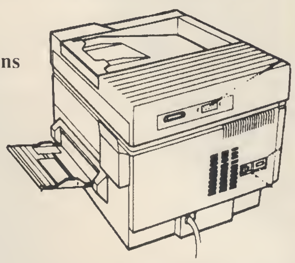

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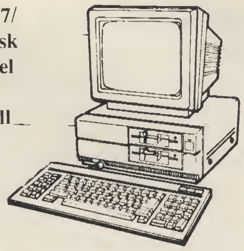

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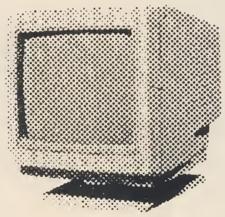

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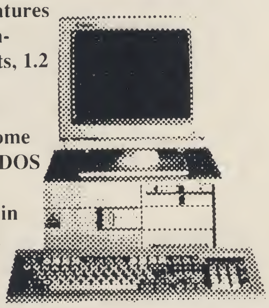

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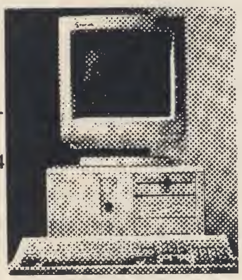

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ST SFXxxxx

Searching for the perfect ST beat, Count CoolOut flips between the disks of MasterSound II and Replay VIII...

Compared to the images your ST's graphics chips can display and manipulate, the noises the sound chip churns out doesn't come anywhere near. To bridge the gap many games and demo writers use a sampler, allowing them to master soundtracks and effects on tape before importing to disc with no apparent loss of quality.

Two of the best ST devices released in '89 were Mastersound and Replay – and now they've been updated. So, what's new?

Both samplers comprise a plug-in cartridge containing an analogue to digital converter which translates sound waves, recorded via a mini-jack or phono audio input, into numbers. Accompanying software enables you to perform a variety of numeric operations on the sampled sound and thereby create a range of effects. The quality of digitally recorded sound is determined by the number of readings per second, or sampling rate, used to measure the definition of the waveform.

Both packages claim sampling rates of 90,000 times a second and beyond – that's over double the rate of CD quality – but with Replay the resolution is only 8-bit while with Mastersound, on an STE, full 16-bit stereo sampling is possible, but only at a maximum rate of 25.6 KHz.

Of course, the quality of the analogue signal you're sourcing is crucial too – as is the level at which you're recording it. Once you've hooked your machine to the hi-fi or a microphone, you need to carefully monitor the level of the incoming signal, maximising clarity whilst minimising distortion. A variety of visual displays of audio are available for this purpose - from oscilloscopic waveform monitors and 'VU' metering to 3D spectrum analysers. Once onboard you can rest assured the sampled sound is safe in RAM and available for all kinds of trickery.

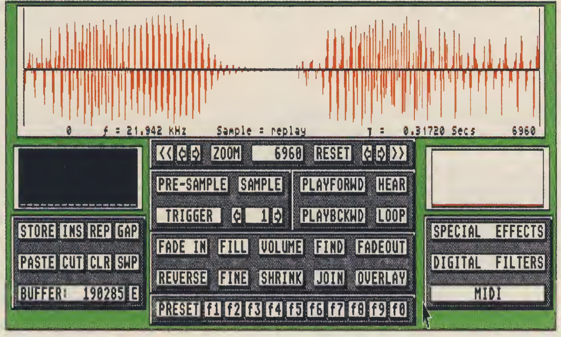
MASTERING MASTERSOUND

Master Sound comprises a small cartridge, fitted with a standard 3.5mm mini-jack input to take a source such as a Hi-Fi, Walkman or microphone. Once loaded, the software utilises the full available RAM of the computer – leaving you 270k on a 520 and 780k on a 1040.

In standard ST mode, you can choose any sample rate between 3 and 30.7KHz, while in STE mode there are three frequencies available to you – 6.2, 12.5 and 25.6KHz – before clicking on the digital oscilloscope, LED style VU meter or 3D waveform display to set the input level for optimum sampling level. By positioning sliding bars as 'in' and 'out' points of an edit, you can choose where you want the recorded signal to reside in displayed memory. The data appears as a waveform which may be easily magnified for precision editing – parts of the sample can be cut, copied, overlaid, faded, filtered, shrunk and made louder by clicking on icons.

Where Master Sound really comes into its own though is in its inclusion of a one-track sequencer. Entering sequencer mode, presents you with a push-button facility to assign up to 18 samples to the keys on the numeric pad. The idea is to load successive samples into memory, allocate keys to them, and then record a master sequence by tapping the keys in real-time. Repeated tapping of the same key will result in 'n-n-n-nineteen' style stuttering. In addition, you can change the pitch of the sampled sounds by plus or minus half an octave by pressing the numeric keys above the alphabetic keys. In this way, quite complicated sequences of a 1000 secs in length can be recorded. These can be replayed, fast forwarded, rewound, edited at will and even overdubbed. The results can then be saved and recalled from disc.

The one drawback to this ingenious feature is the fact that the sequencer will only handle sounds sampled at 16KHz on a standard St or 12.5 KHz in STE mode. It's not a good enough rate, for instance, to be used in disco or live performance applications, which is a shame. However, sounds can be recorded at 32KHz say and then squeezed for sequencing at 16KHz overcoming half of the problem, but then the output quality is still limited. But, if you're interested in using samples in your own programs then the quality easily suffices. And in this department, Master Sound positively excels since samples can be added to your own graphics and text with short BASIC routines. Atari, GFA, Power and HiSoft BASICs are supported and compatibilty with Degas files ensures you're able to put some imaginative audio-visual mixes together. All this for £39.95!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FADE IN FILL VOLUME FIND FADEOUT
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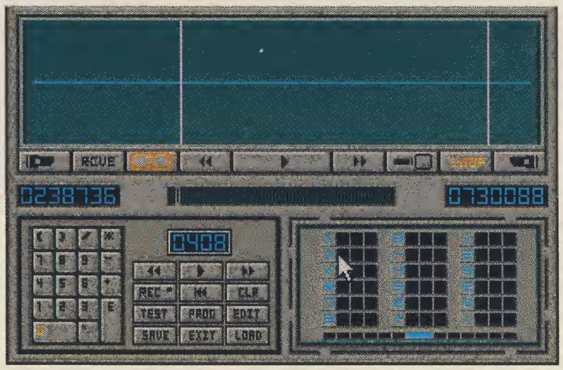
PRESET f1 f2 f3 f4 f5 f6 f7 f8 f9 f0
SPECIAL EFFECTS
DIGITAL FILTERS
MIDI

• Replay VIII's main display layout - easy to use and fast for audio editing.



• Master Sound's built-in sequencer allows you to program 16 minute mixes

REPLAYING REPLAY

Replay's plug-in cartridge is preferable to that of Mastersound since it allows both phono input and output. As such, you're able to replay all your work back through your hi-fi rather than a tinny monitor speaker. The software's neat too – maximum sample rate is a claimed 100KHZ with a more resonable, and excellent, 48KHz available in hi-fi mode. The package also offers built-in special effects editors to alter the sample – pre-sets include echo, reverb, flange and hall and room acoustic simulators – and 8 different filters for optimum playback quality.

Leaving 230k and 730k spare on a 520 and 1040 respectively, Replay also offers MIDI facilities and a built-in Drum sequencer. MIDI sets can be loaded off disk and assigned to any one of 16 channels for playing through a synth – up to 10 samples can be assigned to keys for instant recall. The drum sequencer, DrumBeat, will play back two samples at 22KHz simultaneously and is able to handle and assign up to 15 sample sounds of half a second each. You can have up to 50 patterns which can be synchronised for MIDI output.

Most useful however is a file conversion utility that allows you to load samples from Mastersound, STOS Maestro and all other versions of Replay at the frequency they were recorded at for subsequent manipulation. Output files too can be converted to run under these other formats.

Replay VIII costs £79.95

Both MASTERSOUND II and REPLAY VIII are available from Microdeal on 0726 68020 ■

SAMPLER SFX

Both packages will allow you to slow down, speed up, reverse, cut, copy, merge, add echo, reverb and filter sampled sounds. Also standard is the loop function which allows you to splice a sound into an endlessly repeatable sequence. In addition you can squeeze, stretch, fade-in and out, and through MIDI drivers play samples through a synthesiser.

If you're serious about incorporating samples into games or demos then you can also incorporate then they also offer paint package compatibility for slide show applications.

HOW DO THEY COMPARE?

Since Mastersound is half the price of Replay you might imagine it's the one to go for. It's definitely an improvement over its predecessor since its integrated sequencer can now handle 16KHz samples and it also has been given MIDI and STE compatibility.

However for £40 more you can get your hands on Replay's greater sampling quality of 48KHz, its phono output allowing hi-fi reproduction and its MIDI compatible drumbeat sequencer.

So decision time. I'd go for Mastersound - the sequencer is brilliant fun and you can incorporate samples into your own BASIC routines without recourse to Assembler.

BEHIND THE SCREENS

Sick of smeary spreadsheets? Fed up of fuzzy flight sims? Take some advice and lose those headaches, you need a monitor...

Most people use their computers through an ordinary TV. If you are one of them you will need no telling that the picture can be blurry and the colours either radioactive or dull, but nothing in between.

The solution is to buy a monitor; these are dedicated screens which have been optimised to make your computer's output look as good as possible. They are sharp and clear, and colour models show off graphics a thousand times better than a TV.

If you are going to do any serious work you really need a monitor; reading text on a TV will give you a headache in seconds, and small sizes of text are completely illegible. Similarly, games benefit enormously from a monitor. I remember trying out *Blood Money* on a monitor for the first time having previously played it through a TV and the difference was stunning; there was a whole lot of detail in the background graphic I just hadn't known was there and it was possible to navigate much more precisely because you could see what you were doing.

A monitor, then, should be high up on your shopping list. But how do they work and how do you go about choosing one?

CRT OUT

The screen of a monitor is a cathode ray tube (CRT) just like a tube in a TV. Inside the CRT is an single electron gun which shoots a beam of electrons at the screen. The back of the screen is coated with a special phosphour-based chemical which glows when the electron beam strikes it. The electron beam is scanned from left to right and top to bottom over the screen. The strength of the beam, and therefore the brightness of the spot of light is under your computer's control, so it paints the picture on the screen.

A colour monitor has three electron guns which fire at different colours of phosphorous material on the screen. The material on the screen fluoresces in red green and blue, the three colours of light from which the entire spectrum can be made. To keep the three colour guns separate, they pass through a 'mask' which makes sure that the three beams land on the appropriate phosphors.

The main difference between your TV and monitor, is that the TV has a device called a tuner to pick up TV channels from the aerial, whereas the monitor has an interface to allow it to pick up signals from the computer.

It's the interface between computer and monitor that brings compatibility problems. A PC monitor might have the same CRT as the one for an Amiga or an ST, but the display circuitry for the three machines would need a different interface and connections. Thus a dedicated PC monitor wouldn't be happy directly connected to an Amiga and vice versa.

With dozens of standards for display around, buying the right monitor for your machine can be a problem.

To make matters even more confusing, a machine such as a PC may support several different display options from a simple text only display to a multi-colour high resolution display.

The higher the resolution that is required, the finer the tolerances must be within the CRT. One of the ways of deciding how good the resolution of a monitor will be is to find out what its 'dot pitch' is.

Put simply, the dot pitch is the gap between the dots on the screen. The smaller the number, the greater the number of dots on the screen and the sharper the monitor will appear. For a 14-inch PC monitor a dot pitch of 0.28mm is high resolution. 0.31mm is adequate. As the dot pitch gets larger, the resolution tails off until at about 0.39 it is beginning to get fuzzy.

Once you know that a monitor is sufficiently sharp, you will need to check its suitability for your machine. There are a number of different types, which go by confusing technical names. Among them are:

- **TTL**, which works by using set voltage levels to produce specific colours. For example, a TTL monitor using two signal levels per gun (plus no signal when the gun is off) could produce nine variations of colour.

  Other numbers of levels produce different numbers of colours, but there is always a limit and the monitor can only display certain colours.
- **Analogue:** An analogue monitor expects an infinitely variable signal and can handle many more colours.
- **RGB.** If you are intending to use a colour monitor, the chances are that your computer will put out RGB signals. This stands for Red Green Blue and means that a separate signal is sent to control each of the three colour guns in the monitor.
- **Composite.** A composite monitor is one which expects a single signal from the computer that has all of the three RGB signals encoded in it. Additional circuitry in the monitor turns this back into RGB for the colour guns. This isn't as elegant as pure RGB and the display isn't usually as clear.
- **SCART.** A halfway house between TV and monitor is a monitor-TV that has a SCART input. This will accept RGB signals through the SCART connector, but still suffers from the lower standard (and higher dot pitch) of a TV screen. Its advantage is that you can watch *EastEnders* as well.

MONO OR COLOUR

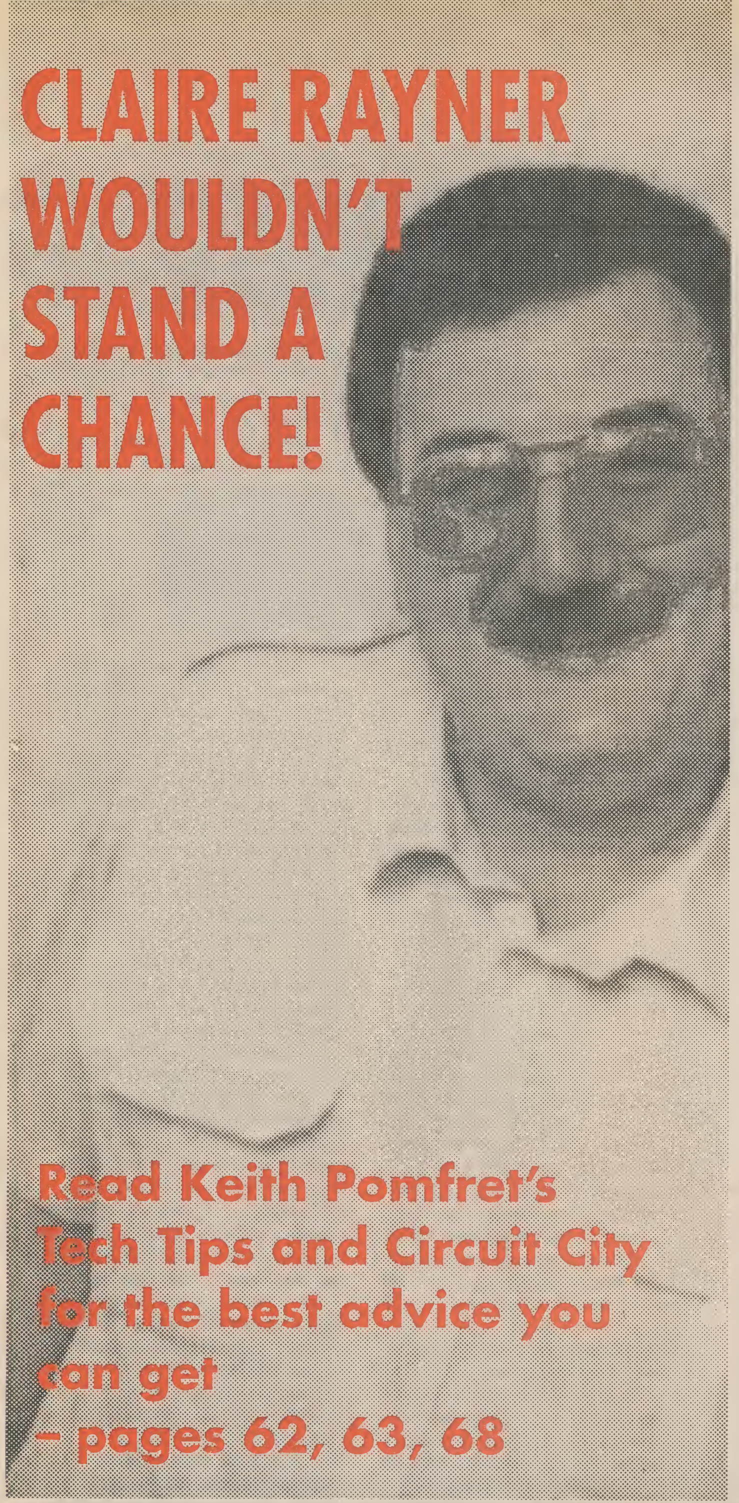
Colour is prettier and better for showing of graphic things, but for serious software a cheaper mono monitor may be better. Applications like word processing and DTP can benefit from a mono display and the choice of green, white and amber mean that there's a mono screen that suits most people's needs.

If you were doing DTP on a PC it might be better to buy a mono VGA or Hercules monitor and card than to spend the same money on an EGA or CGA colour monitor. Pick the monitor that suits the job at a price you can afford. ■

BUYING TIME

If you're buying a monitor for your computer, check the manufacturer's specification of both computer and monitor to check that they're compatible. If they are compatible, make sure that the necessary cables and leads are either provided or available. Products that are advertised as ST/Amiga or PC compatible won't be too much of a problem, but many people have been caught out by '£50 colour monitor' type advertisements only to find that the monitor will only work with a steam powered Babbage Engine.

A cheap mono monitor can cost as little as £20 while a high resolution colour one could set you back a four figure sum. A rough guideline is around £100 for a good mono monitor, a little more if it conforms to the PC VGA standard. £220-plus will get you a medium resolution monitor suitable for PC, Amiga or ST, and £500 plus will put you into the big league of professional quality units.



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Amiga

OMEGA MIX

If you've got even the slightest interest in all things musical on the Amiga, then Omega Projects is a company on which to keep your eye. Omega has a number of products should be of special interest to musical (and not so musical) Amiga owners everywhere.

Although it's been available for a fair while now, Omega's SoundTrap 3 audio sound sampler is still selling well. For £29.95 you get a high quality sampler that works on all Amigas (including the A1000), has a built-in printer pass-through connector and comes with powerful sampler software – free of charge. I've been using a SoundTrap 3 sampler for months now, so it comes with my high recommendation.

Another goodie from Omega is its Mini-MIDI, a MIDI interface which works happily with all Amiga MIDI software and MIDI devices. With Mini-MIDI there's no reason to buy separate MIDI leads as Omega has built them into the device, making Mini-MIDI a one-stop solution to your MIDI requirements. If you buy now Omega will even throw in a free copy of the PD MIDI sound tracker program, Med 2.13. Mini-MIDI costs £19.95 and is available for all Amigas.

New from Omega is its four channel audio mixer which comes complete with either a standard Dynamic microphone (for £35) or with a better quality condenser mike (for £40). With the mixer you can combine four channels of a single output making it ideal for many applications, including desktop video, multi-media and, of course, sound sampling. Each channel features its own independent volume control plus extra volume control for the combined output.

For more information about these products and others, give Omega a bell on 0925 763946. Don't forget to tell them that *Express* sent you!

MORE MUSIC

On the subject of MIDI software, GFA Data Media (UK) Ltd (GFA to its friends) has taken on the distribution of the range of Digigram music products for the ST and the Amiga. For Amiga owners these include *Track 24*, *Studio 24*, *Big Band* and *Pro-Score*.

Elsewhere at GFA plans are afoot for yet another major release of their acclaimed BASIC system, *GFA BASIC*. According to Les Player at GFA, version 4 of *GFA BASIC* is based around the brand new release of GFA for the PC. Enhancements include a considerably more powerful directory, file handling and system control commands, making *GFA BASIC* even better for the applications programmer. The enhanced DOS support provides a more PC standard interface across all three machines.

Good news for PC owners (I know this is the Amiga column, but it's all relevant). GFA is soon to release a windows 3 compatible version of *GFA BASIC*. This will be closely followed by both *Unix* and *OS/2* versions. The company hopes to make all versions as compatible as possible (therefore establishing a common development environment across all machines), so this is good news for the future of Amiga *GFA BASIC*.

GFA can be contacted on 0734 894619.

16MHZ ST... SO WHAT?

So Atari is going to blow away the competition with the 16MHz Mega STE, eh? Atari owners everywhere are claiming it's the ST machine to finally bury the Amiga. Is our beloved machine finally under threat from the ST? Don't you believe it.

What is this pre-occupation people have with processor speeds? OK, it's nice to have a super fast machine but how many people actually need such power? Unless you're into applications that require huge amounts of number crunching (such as ray tracing or CAD), that extra power will very much go unnoticed. After all, you're hardly going to notice the extra speed if you use your machine for word processing!

I'm not saying we don't need faster machines (I'd love to own an '040-based Amiga) but people do tend to play up their importance far too much. It's machine specification that counts, not raw processor speeds. After all, everyone knows the current Atari range is faster than the Amiga (excluding the A2500, A3000 etc), but has it made a blind bit of difference to sales?

The fact remains that besides the machine's increased processor speed, the Mega STE still doesn't stand up to the Amiga. The Amiga has better sound, better graphics, a considerably better user interface (especially when 2.0 arrives), it multitasks etc. I could go on but you already know what the Amiga can do.

And there is one final nail in the Mega STE's coffin. A well known PD supplier in Scotland is planning to import an American upgrade for the Amiga that knocks the machine up to 16MHz using exactly the same chip as used in the new STE machine. How much does this cost? £300? Nope. £200? Nope. £100? Nope. How does £25 sound to you? Release dates are uncertain, but expect to see it on the market in the near future (mine's already on order!).

BOOKS FOR BOFFINS

Hot on the heels of Abacus' latest book releases (reviewed in last week's column), Bruce Smith Books have announced the impending release of what it claims is the definitive guide to AmigaDOS.

As the name suggests, *Master AmigaDOS 2* includes full coverage of the latest 2.0 release of the Amiga operating system. Within its two volumes, the book provides a real hands-on tutorial to all aspects of AmigaDOS use and operation, while volume two is a complete reference to all AmigaDOS commands.

For those of us not lucky enough to actually have AmigaDOS 2, the book also covers previous versions of AmigaDOS, making it an ideal reference manual regardless of whether you're running 2.0, 1.3, 1.2 or even 1.1.

Subjects covered in volume one include disk management, file protection and assignments, structured AmigaDOS, customising disks, the shell, multi-user systems on the cheap, AmigaDOS batchfiles, the StartUp sequence, environment variables and much more besides.

As well as a complete reference guide to the AmigaDOS command set volume 2 also covers the mount list, IFF, error codes and the virus menace.

Both books were written by that highly respected computer journalist Mark Smiddy (never heard of him), who has contributed on a regular basic to those well known Amiga publications *Amiga User International* and *Amiga Format*. As soon as BSB get around to sending me review copies of both (hint, hint), I'll bring you a full review of these very promising books. Until then, BSB are on 0727 41243.

MAD ABOUT MUSIC

Specification-type details are starting to become available for Gajits' Sequencer One MIDI sequencer. Here's what it has to offer:

- 32 Tracks of real time MIDI recording at 192 ppqn resolution
- *Music-X*-like step editor displays each note as a vertical bar for easy editing.
- *Trax*-like song editor for easy construction of songs.
- Includes software generated effects such as digital delay plus extensive quantization, transposition and scaling options.
- Fully multi-tasking. It also uses very little memory – up to 30,000 MIDI events can be recorded on a 512K Amiga.
- Real time MIDI filtering and controller remapping.

Jason Holborn

Archimedes

LASERJET TO POSTSCRIPT

If you've got a real LaserJet printer – one from Hewlett Packard itself rather than a clone – then you could turn it into the PostScript laser printer you've always wanted. And you might be surprised at how little cost– around £450.

A company called Pacific Data Products has pioneered the idea, putting the PostScript language and the 35 standard typefaces into a normal Hewlett Packard font cartridge. All you do is plug in the unassuming-looking Pacific Page cartridge, switch on, and a few seconds later:'Postscript Ready. Total flexibility.'

There are two cartridges commonly available, usually from PC dealers. Pacific Data's is at first sight £50 or so cheaper than Hewlett Packard's own, but the difference goes slightly deeper.

Most of the Hewlett Packard printers come with 0.5 or 1Mb of memory already fitted. This just isn't enough for Postscript. You can add extra memory easily enough, through slot-in cards – up to 2.5Mb for the Pacific Page cartridge. The HP cartridge is a little more frugal, and can function only on 2Mb, so this cancels out the difference in the original price. Adding more than the minimum for either cartridge means extra printing speed.

The final difference is that Hewlett Packard offers real Adobe PostScript (like the Apple Laserwriter), whereas Pacific Data gives you the PhoenixPage PostScript clone.

PhoenixPage prints your pages a tad faster. But it uses Bitstream fonts rather than the Linotype fonts supplied by Adobe which means you have to alter your PSprolog file to make it work (to match Homerton to Bitstream Swiss rather than Linotype Helvetica). I prefer to go with the HP source.

Once you've connected either cartridge up, you print via the PrinterPS PostScript printer driver as normal. Neither cartridge is quick: Laserjets are fitted with fairly humble 68000 chips, whereas real PostScript printers like the Apple LaserWriter NTX have faster 68020s.

But it is PostScript. And unless you want to print huge sprites all the time, it's quick enough: text pages with outline fonts take a few seconds, not the three or four minutes a LaserJet takes. Bear in mind that you're limited to the standard PostScript fonts – the eleven families listed in *Express* 107. Though you can download new fonts to either sort of cartridge, there's no way to do this from an Arc yet.

Why would you do any of this? The need for speed is obvious. If you're struggling at work with a LaserJet printer, then order one of these cartridges today. Direct drive it ain't, but it sure beats nailing jelly to the ceiling.

A network is another good reason: it's perfectly practicable to share PostScript printers over Econet, using Software Solutions' *Sharer* software. It is not sensible to share LaserJet-type printers.

The third good reason is cost. An HP LaserJet III has to be great value as a PostScript printer. At a street price of about £2000 including more RAM and the cartridge, it beats every other 300dpi printer hands down for print quality because of the resolution enhancement system (Contrary to popular belief, this does work with graphics and PostScript, as well as the Laserjet's normal PCL mode).

If you've already got the LaserJet, then a PostScript cartridge could literally change your life. Both HP and Pacific cartridges, and JetRAM cards are available from Technomatic (on 081-205 9558) and many other PC dealers.

NEW FOR OLD

Acorn has upgraded 65Host, the BBC B emulator, to run even more old Beeb software. £20 does seem a little steep for an upgrade on something that comes with the machine, particularly when the improvements are relatively minor – the original version ran *Chuckie Egg*, and what else would a reasonable person want?

More importantly, Acorn has also released version two of the RISC OS printer drivers. These print graphics and the outline fonts in exactly the same way as the old ones did but improve on the plain text output. Character mode applications can now print bold, underline, italic and so forth on any printer.

Essentially, instead of just printing plain text like Edit, the new drivers interpret highlight codes such as those used by *First Word Plus*.

Version two drivers will support *Schema*, Clares' spreadsheet, which should just make it out in time for Christmas. Or New Year...

STEP FORWARD WITH MULTIMEDIA

There was once the 'Year of DTP'. There was the 'Year of the Network.' Real soon, almost any time now, there will be the 'Year of Unix'. Maybe.

But there's little doubt that this is the 'year of multimedia'. Or at the very least, this is the year of the words: "this is the year of multimedia."

New readers who have just flown in from Albania may need a few hints. Combine computer-generated text and graphics with almost anything else – full-motion video, still video (or photographs as we call them in the trade), sound, animation, cave painting, macramé – and no-one can sue you for calling it multimedia.

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Avanti is Westland's new multimedia authoring package for the Arc. It allows you to combine text, sprites, drawings, scanned or digitised images, animation, sampled sound, and control external devices like CD-ROMs and video disk players. Put them all together and you have a 'learning machine' (as distinct from a 'teaching machine', which is a terribly unfashionable idea these days). Think of *Avanti* as a sort of super-*Genesis*, but aimed primarily at the professional computer-based training market.

If you want to know how much it is, you don't want to know how much it is. Acorn, of course, has a great track record with multimedia. It showed, with the *Domesday* system, that it could create a great product, expensive but also innovative and full of educationally-sound ideas, and then aim it at an education market that couldn't even afford to buy books.

Perhaps the professional training market does have the money to make *Avanti* a success, especially as *Avanti* combined with an A540 or 440 is claimed to be around £1500 less expensive than equivalent Mac or PC systems.

But the 'home and school micro' tag that Acorn carries opens a yawning credibility gap with professionals. Value for money may not be the best message to preach. What Acorn needs to show is some real-world examples to substantiate marketing director Mike O'Riordan's assertion that it "delivers solutions you cannot get in the MS-DOS world."

DTP MIXED NEWS

There could be an Archimedes-only magazine on the streets in three months time. It's based on *A&B Computing* and is to be renamed *Archimedes World*. Um, I seem to remember that the last time someone used *that* title, it was with the QL.

Actually, *A&B* publisher Argus seems to be making a fuss over the fact that the new-style mag will be produced on an Arc using *Impression DTP* software. Big deal. It looks like old favourite *Acorn User* has beaten it by a few months: it's already published two supplements using *Impression* (the first back in early April), and the January '91 issue (which should be out now) sees the first main mag pages created with *Impression*.

This sort of thing has been standard in the Mac magazine market for ages, but it's cheering to see Arc mags go live with DTP acting as a showcase for the Arc

DESKDUCK PLUS

December looks bad for turkeys, but nearly everyone else has it pretty good. Acorn is making it a little better by putting together a disc of 'fun' programs for a fiver.

The disc features a *Tetris* (ish), a maze game, an adventure game, seasonal raytraced pictures and best of all, *Deskduck Plus*. The proceeds will go to providing computers for children's homes in East Anglia. Send cheques (payable to Christmas disk offer) to Christmas disk offer, PO Box 400, Cambridge CB1 1AE.

NORWICH CAREWARE

As it is the season for giving, I'll shamelessly remind you of Norwich Careware disks. If you've got any of these without paying (from a friend, or from SID perhaps), please remember that the software authors have requested a small donation to a charity instead of royalties.

A look at the contents of these and other PD disks is coming soon to a column near you.

RUMOURS, RUMOURS

The phone lines are alive with talk of 'major business announcements' at Acorn. This may, or may not concern Apple and the future development of the ARM chip set.

Sadly the news broke just a little too late for the columnbut the news boys should have all the details.

Ken Coumarin

PC

TAKEN TO TASK

I have been rebuked over my comments in this column recently about the lack of serious software support for the Amstrad by no less a person than Steve Denson, boss of SD Microsystems.

"You state that you think the serious side of CPC computing could be finished within two years. As editor of the leading CPC magazine (*Amstrad Action*) you must bear some responsibility for this situation if it happens."

Steve then notes that *AA* did not give coverage to a DTP competition organised by SD Microsystems, a new payroll program and various software updates.

Fair comment, Steve, but my point does not concern specialist software such as that provided by SD Microsystems (which I agree sells software to cover just about every business need). Frankly, with the continually falling prices of basic PC clones, how many people would still use a CPC to run their business? (I'd be interested to see some figures.)

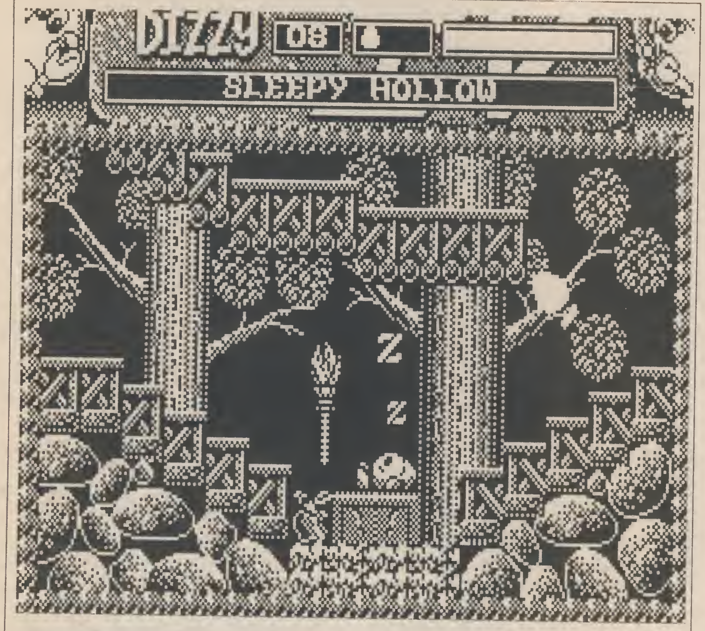
And is it fair to accuse a magazine of potentially damaging an industry? True, the relationship between software publishers and the press is half way to being a sybiotic one, in that one would find it extremely difficult to succeed without the success of the other.

But the two sides are not balanced equally. Publishers who don't get editorial coverage in the press will be merely hampered – but for a magazine to attempt to redefine the industry is pompous foolishness. Never mind that, though – my remarks were really aimed at more general 'serious' software.

For example, who can name a decent new word processor? Why have there been no new art packages since *Art Studio*? What about databases and spreadsheets?

These are general applications which seem to have dwindled away. It's as if everyone seems to accept that the best serious software has already been written! Certainly there are some very good packages out there, but they're getting old now – there's nothing like the promotional push of a new product to capture the public's imagination.

Sadly, that's something that can only really be achieved by a major company with a large investment in presentation, packaging and publicity – and it was the lack of that which I was bemoaning.



• Dizzy 4: Magic Land Dizzy *see the return of the villainous Zaks.*

IT'S DIZZY EGG-AIN! (SORRY)

Codemasters' unlikely egg-shaped hero Dizzy has already starred in three budget epics. Undaunted, he's back for a fourth.

Called *Magic Land Dizzy*, *Dizzy 4* follows the same game formula as the previous outings. You must guide your rotund pal through a landscape populated with nasty creatures, puzzles, traps, hazards and things to collect.

This time all of Dizzy's friends have been taken hostage by the evil wizard Zaks (who Dizzy defeated in the first game of the series – yes, he's back!), and once he's done that, Zak has to get the chop too.

Scattered around the landscape are objects to help you in your quest. This is where it gets hard. It can often take much brain-racking to work out which object is supposed to help you do what.

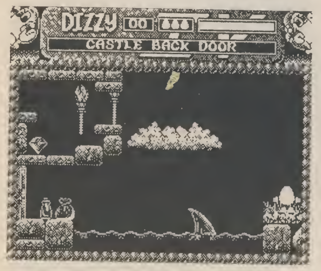
Sometimes the answer will come with a blinding flash of insight, sometimes you have to get to it by laborious trial and error. Either way, the puzzles will challenge just about any player, and in themselves guarantee a long life for the game (If you don't pack it in with frustration first).

The graphics are a case of the curate's egg (ho ho). The bad news is that the game is a Speccy port. The good news is that it's nevertheless been very well executed. Screens are detailed and uncluttered while the characters themselves extremely cute.

For just £2.99 you really can't complain. And if all this sounds like kids' stuff, don't you believe it! *Dizzy 4* is extremely playable and tough enough to challenge the biggest 'kids'.

And if you fancy trying the whole Dizzy experience, Codemasters is releasing a new compilation for Christmas called *The Dizzy Collection*. This includes all the Dizzy games so far (including *Dizzy 4*) for an all-in price of £9.95. That really does represent an awful lot of rather good gaming for not a lot of money. Always assuming you don't get sick of eggs...

Dizzy 4 will be out on its own in January at the usual budget price of £2.99.



• *The further adventures of the egg-shaped hero in* Dizzy 4.

STUNT CAR RACER POKE

Having trouble getting through Micro Style's smashing (literally) racing sim? Gear yourself up with infinite boost and invulnerability with this poke from John Girvin of Belfast (disk version). By the way, the dots in the listing indicate spaces:

```
1 'STUNT CAR RACER hacks
2 'By John Girvin
3 'August 1990
4 '
10 MODE 1:CALL &BC02:PEN 1
20 addr=&BE80:RESTORE
30 READ byte$
40 IF byte$="VAROOM" THEN GOTO
70
50 POKE addr,VAL("&"+byte$)
60 addr=addr+1:GOTO 30
70 PRINT "Insert STUNT CAR RACER
disc and press a key..."
80 CALL &BB18:CALL &BE80
90 '*** LEAVE 100-160 IN ***
100 DATA 21,b0,be,cd,d4,bc,22,b1
110 DATA be,79,32,b3,be,21,00,01
120 DATA 0e,41,11,00,00,df,b1,be
130 DATA 21,a7,be,22,0c,01,c3,00
140 DATA 01,a4,48,4c,46,08,5a,21
150 DATA b4,be,22,7b,80,c3,09,80
160 DATA 84,00,00,00
170 'Infinite Boost
180 DATA af,32,77,21
190 'Invulnerability
200 DATA 3e,c9,32,c3,98
210 '*** LEAVE 220 IN ***
220 DATA c3,40,00,VAROOM,4a
```

IT'S TAPE TIME!

Just a quick note to make sure you look out for the January issue of *AA* – complete with its Christmas covertape. What do you get? Well, there's a fully-playable demo of Ocean's brilliant *Puzznic*, budget classic *Lost Caves* in its entirety, a complete *Sprites Alive* game (plus a special money-off offer inside the mag) and a transfer routine that'll save all these goodies to disk.

Can't wait? Well you'll have to... at least until December 20th, when the issue goes on sale...

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64

WHEN SHOVE COMES TO PUSHER

With some of the so-called 'big-name' software houses still either dithering over the matter of cartridge software or failing to get their acts together at all, it was reassuring last week to be passed a message from Dinamic, author of the recently released *Satan*, among others.

The software house has decided that not only will its next release for the 64 be on cartridge but, apparently, its back catalogue will soon be converted to the pirate-proof format as well.

Whether this move will encourage those who have recently bought *Satan* to buy it again in this more durable medium is highly doubtful but the company's next release sounds as though it's on the right track in what seems to be a new trend in software themes.

Narco Police is about the exploits of a futuristic anti-drugs police unit, sent to attack an island narcotics factory run by the now ubiquitous drug baron computer game bad guy figure.

The game, according to the developers, is a mix of arcade action and strategy. Players have to make split second decisionsconcerning things like the deployment of their troops (sorry, police with guns) in-between the straight-forward shoot-'em-up screens.

The Amiga screenshots look enticing and there seems to be no reason why it couldn't be adequately converted to 64 format. However, a press release about *Narco Police*, received a week earlier, unfortunately made no mention of such a conversion being planned.

If the latest news about the game is accurate it will add to the growing list of titles based on the theme of fighting drugs with violence.

First was US Gold's *Snowstrike* (*Express* passim), in which the scenario depicted elements of the USAF taking international law into its own hands and bombing rural Columbia.

The second, Ocean's *Narc*, brought the idea closer to home by setting the policy in inner city areas. *Narc*'s first incarnation was in a sanctioned coin-op developed by Williams. The game's attract-mode screen bore the legend, 'Winners don't use drugs.'

Ocean's *Robocop 2* has adopted its anti-drugs line by virtue of following the film script on which it is based. The game is still awaiting release as these words go to print but a demonstration version at the office has Robo wandering through the extremely dangerous environment of a warehouse/factory, blasting away at the guards, rescuing hostages and collecting the stash of Nuke as he goes along.

No doubt the end sequence will show a fearless fibreglass man chilling out with his new found booty, man.

OCEAN'S DRUG

If anybody's addicted to anything it's Ocean, which is mainlining film licences at an astonishing rate.

The latest of these, which is due for release in the New Year, is based on the forthcoming *Snowstrike*-like film, *Wings of the Apache*. In the game elements of the USAF bomb Columbia apparently because the Colombians keep selling crack to USAF pilots (or something along those lines).

In the film (and the game), Apache helicopters are used to entice thousands of people into watching Nick *Wild At Heart* Cage deal it out to dealers without any hint of mercy. Apparently winners don't use drugs, but they do have access to state-of-the-art firepower.

Games with a moral – especially when they endorse violence as a solution – seem to me to be treading on thin ice. HFW is the kind of man who would pay money to hear your thoughts on this matter, though, so send any you have to him, not me, at the usual address. That's Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW.

FIGURE IT OUT ANOTHER WAY

None of this dubious ideology guarantees that a game is worth playing (though *Robocop 2* does look at least as good as the original) but there seems to be another trend afoot which looks more promising.

Puzzle games are beginning to come thick and fast, some on cartridge (like *Plotting*). Anybody who's read De Bono's *Lateral Thinking* or heard his 'true game' theory must have been wondering why puzzles have taken a back seat for so long and barely progressed beyond the backwaters of Mah Jong look-alikes. But closet teaser freaks can finally start celebrating.

Ocean's other fixation is in this area and as if to prove that *Plotting* wasn't an accident, the company has just finished *Puzznic*, a game in which pairs or triplets of icons have to be shoved up against each other inside numerous two-dimensional compartments.

Gravity is the only law and some compartments are fitted with elevator or conveyor blocks on which icons can be transported around the screen. Time limits, a two player set-up and an intriguing choice of difficulty progression definitely make this one a worthy addition to your collection.

IT CAME FROM CALIFORNIA

Finally, Origin has been up to its old tricks again. Mindscape is soon to release *Ultima VI* for the Commodore 64 (the PC version having been around for a few months already).

The *Ultima* series has been around for longer than a significant number of C64 users. It first appeared on the old 8-bit Apple in 1980, called *Ultima I – The First Age of Darkness* and has to be, therefore, the grandaddy of computer programs. (An experimental version called *Akalabeth*, appeared a year earlier and sold an unprecedented 25,000 copies.)

Programmer Richard Garriot became famous (and rich) in the following years, appearing himself in the games as the benevolent computer character Lord British. *Ultima* itself has become an institution and its fantasy setting boasts enormous scope and depth. But some now feel that it has outgrown the machines which spawned it.

The recently released PC version can be played in VGA mode, in which 256 colours are on screen at once. A reviewer commented that when the game ran in the less sophisticated CGA mode that it was 'virtually unplayable.'

Luckily you'll be able to decide for yourself any day now.

Sean Masterson

PC

DOWN THE BOOKIES

There is one way that we could make a vast contribution to saving trees; stop people publishing American computer books. These massive tomes are big on huge type and white space, as it appears that our cousins over the water choose their reading matter according to thickness.

The latest McGraw-Hill volume to land on my desk rather confirms the trend. It's subject is a piece of utility software which is supposed to make DOS easier to work with – its length is 867 pages.

PC Tools Deluxe: The Complete Reference is described as a "comprehensive desktop resource" and there is not a lot of arguing with that. It does cover absolutely everything you need to know about *PC Tools*; the trouble is, so does *PC Tools'* comprehensive set of three manuals. At the risk of sounding cynical, I would have thought the biggest market for this book was people who had ripped off a copy of PC Tools and want to find out some of the more obscure commands. But then that's just my warped view of life for you.

PC Tools Deluxe: The Complete Reference costs £19.95 and has an ISBN of 0-07-881648-3.

COMPRESSION

After the mention of the *PKZIP* file compression utility in this column a few weeks back, Tony Bryer of Twickenham has written in with a plug for an alternative *LZEXE*. This isn't a program I'm familiar with, but Tony is enthusiastic:

"It works on EXE files, compressing them and adding on the decompression coding to make a self extracting files. When you call up a program that's been *LZEXE*'d this code decompresses the program in RAM and then removes itself, leaving the program in its original form."

It appears, says Tony, that the compression algorithm has been optimised for speed of decompression rather than minimum size. This means that it is actually quicker to load, say, a 100K compressed file and decompress it than it is to load the same file in its 200K original form. This applies even more to those condemned to work on a floppy disk system.

Tony also points out that compressed files are checksummed, so hopefully any virus infection should be picked up easily.

You can get hold of *LZEXE* from any good shareware library.

SCROLLING

Tony also mentioned another handy shareware utility; *ASC2COM*. This little program converts text files of up to 60K into a self-scrolling text file. Apparently you can use colours and even incorporate help messages. Sounds ideal for producing decent read me files.

Finally Tony suggests converting a text file to a COM file with *ASC2COM*, converting that to an EXE file with *COM2EXE*, and then compressing it with *LZEXE* to make a self extracting auto-scrolling file that is even smaller than the original text file! Long live shareware.

NETWORKING

Networking PCs is pretty difficult. Lots of wires and piles of software have to be dealt with, and keeping a network up and running is a full time job. To help anyone considering taking the plunge into networking IIR Technology has arranged a series of three day courses on the subject.

Topics covered include the basics such as sharing data and electronic mail, as well as more esoteric subjects such as the OSI reference model, FDDI and the two tier assistance concept. I have no idea whether you actually need to know these things, but they sound like good jargon.

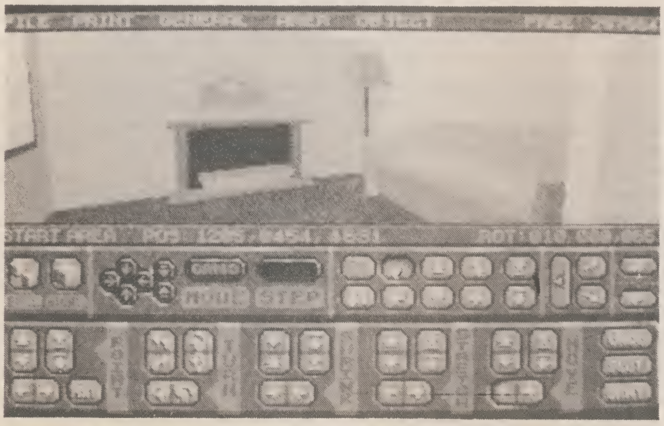
The three day courses cost £73.85 and the next one is at the end of February. Most are held in London, but there is one in Dublin March. Contact IIR Technology on 071-622 5444.

VIRTUALLY REAL

Virtual reality has been the buzzword of 1990. Now Domark is giving us the chance to dabble at the edges with *3D Construction Kit*. It enables you, claims Domark, to create, design and plan a real environment, then walk into that environment and interact with it as if you were actually there.

This sounds rather like a graphic adventure without the adventure. Apparently you can create whole towns and wander around them. It is not at all clear why you should want to do this, but you can also add animations, if you think that will help.

3D Construction Kit will be available in April, with prices yet to be announced.



• Wander around virtual reality with 3D Construction Kit. This is actually an Atari screen, but the PC version will be similar.

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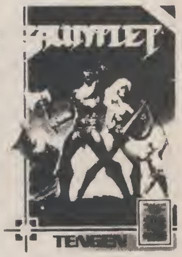

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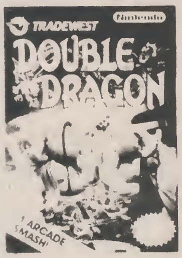

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SLOW UP

Is your hard or floppy disk irritatingly slow? Of course it is – I've never met anyone who doesn't want a faster disk drive (not to mention more memory, better screen, faster comms, attractive Norwegian au paire – specify sex when ordering – and so on).

However, one bunch of computer users who rarely complain about disk drive speed are Amstrad PCW owners.

Though themachine itself is an eight bit beast running at 3.5MHz it feels fast because of the RAM drive. Every one of them comes with a minimum 256K RAM drive into which the majority owners load their most used programs and utilities at boot time.

But there's no reason why PC owners shouldn't enjoy a RAM disk as well. In effect it makes any program load as fast as if it were a TSR.

Unfortunately there are two drawbacks. One is that the program that creates the RAM drive (usually called RAMDRIVE.SYS or VDISK.SYS) has to be run from CONFIG.SYS, which means you need to know what you're going to do before you do it.

The second is that it reduces the amount of memory available to other programs. Personally, I would rather have programs in a RAM drive than present all the time as TSRs.

To try out the effects of a RAM drive add the relevant SYS file to your CONFIG.SYS file – it must be loaded before any other drivers except high memory drivers. A simple CONFIG.SYS might look like this:

```
BUFFERS=20
FILES=99
DEVICE=C:\VDISK.SYS 128
```

Owners of floppy drive only PCs will benefit the most from a RAM drive but there are also non-obvious uses. For example, any large batch file – like a looping menu batch file – runs rather well from a small RAM disk.

Steve Patient
and Stuart Anderton

Spectrum

FIXIT'LL F!XIT

Incompatibility's a nasty business. You spend loads of money upgrading your beloved rubber key buddy to a shiny new plus 3 or plus 2A (that's the black plus 2) only to find all those essential add ons and hardware widgets you own refuse to work with the new machine.

Salvation could be available at long last, though, with the release of FIXIT, a devilishly clever piece of kit which plugs into the user port of a plus 3 or plus 2A and considerably increases compatibility with 48K peripherals.

It was designed and is being sold by Brian Gaff, whose Spectrum column was the best thing about Popular Computing Weekly (remember that?) in my opinion. Brian's tested his device with a fair few add ons and the results were encouraging.

He reckons most non ROM hardware is OK as are the entire family of Romantic Robot's Multifaces. One notably awkward add on is the Opus Discovery disk drive which is liable to self destruct if coupled with your non-48K Spectrum.

FIXIT costs a very reasonable £9.50 inclusive which seems like a small price to pay for compatibility. Order yours from BG Services, (Brian Gaff), 64 Roebuck Road, Chessington, Surrey KT9 1JX.

Brian also offered the following sagely observations on life, the universe and Plus2A/Plus3 compatibility that I think are well worth printing for your reference:

"*Interface 1* only runs in 48K mode on the Plus3, but will function in 128K mode on the Plus2A with the following limitations:

● An IF1 error will return to 48K mode, typing PRINT USR 23354 will get you back whilst retaining the program.

● ERASE commands on the IF1 must have another IF1 command before them in the line – CLEAR for instance – or the Plus2A ROM will report an error.

● The PlusD will only run in 48K mode on either machine, though if the SYS file is loaded and the machine resets, it will Snapshot 128K games loaded from the LOADER.

● Multiface 1 only works in 48K mode, but can co-exist with Multiface 3. The VTX5000 modem will work OK, but the internal software in the modem forces the machine into 48K mode. You can get back to 128K mode by breaking into the software at the blue menu and entering POKE 23611,29 (ENTER).

● Most software drives the VTX in 128K mode without trouble. (If your VTX has been modified to run on the new machines, then you don't need a FIXIT.)

● Most joystick interfaces seem to work, though any that need software may run into troubles in 128K mode. You can easily toggle modes on the Plus3/Plus2A. POKE 23611,205: PRINT USR 4867, gets you into 48K mode but any error will return you to 128 mode until you RUN a program. To get back after this, enter PRINT USR 23354. Then POKE 23611,221. You can ignore the last step, but it will mean the disk drive will run for ever after a save or load etc.

● POKE23399,4 stops the motor, by the way."

Thanks very much and a round of applause for Brian, I think.

SPECCY BBS

Paul Butler of London wants to know which bulletin boards he can log on to which have good Speccy coverage. Apparently the ones he has tried so far concentrate on, "Commodore 64s, Ataris, PCs, even MSXs and Orics, just about everything apart from the Speccy in fact."

A rum state of affairs I'm sure you'll agree. Now I'm not too well up on bulletin boards personally so I thought I'd pass this plea on to you lot for further consideration. Can anyone recommend BBS with good Spectrum coverage? And I don't suppose anyone knows of one that covers the SAM as well?

Jot down all the appropriate details needed to establish communication and send them to me at the following address using nothing more hi-tech than the ever efficient British postal system – Robin Alway, Spectrum Column, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

And as usual, everything else remotely Spectrum-like or in the least bit. Coupesque is always welcomed at the same address.

HANDY POKES

Here's another hacker with a strange name. The following poke was sent in by someone called Woodsy The Hamster. It gives you infinite time and immunity against the robot nasties in Virgin's excellent *Rebel* which was recently given away with YS so you should all have a copy somewhere. To get it working simply bash it in, save it onto tape for future reference if you want, type RUN and start your game tape from the beginning. Drinks all round for Woodsy!

```
10 CLEAR 25343
20 LOAD "" SCREEN$
30 LOAD "" CODE
40 POKE 49324,255
50 POKE 49958,0
60 POKE 52295,0
70 RANDOMIZE USR 49152
```

Here's another tip this time from someone with the altogether more sensible moniker of Michael Woods. It's for *Combat Zone* which is an ancient tank blasting game, I think.

Press 9 to pause game. Then press the following keys all at once: 0, P, BREAK and ENTER. The screen should now read: "Cheat mode ready".

Next press these keys all at once: 0, P, L, BREAK, ENTER and CAPS SHIFT.

Restart game by pressing 8 and then get killed deliberately.

You should then start again with 255 lives, infinite bombs, a full tank of fuel and free numberplates. This can be repeated at any stage of the game.

Thanks to Michael for sharingthat information with us.

Robin Alway

ST

PARADISE HIT BACK

Oh dear. Oh dear oh dear. My comments in this column a couple of weeks ago about Paradise Computers Public Domain Library have put the cat among the pigeons and no large error.

"I appreciate that Future Publishing employees are renowned for their strange sense of humour," writes Paradise main man Neil Slater, "but I feel this public attack on the service Paradise Computers provides was both uncalled for and damaging."

Neil points out that Paradise is run by three enthusiasts for no profit and for the good of other ST users. Everyone involved in this noble venture has my admiration.

He then goes on to complain about my remarks about Paradise's "run of the mill software," my disparaging remarks about the £6 annual fee for joining the 'Paradise Club' and my strong remarks about Paradise's comprehensive collection of pornographic disks.

So, do I apologise? Do I beg forgiveness? Like buggery do I heck as like.

I repeat my contention that, compared to the first division libraries such as Goodman PDL, the ST Club and Floppyshop, Paradise's catalogue contains little if anything that is original.

This in itself is not a deciding factor – though I think *Express* readers have the right to be told which libraries offer above average service – and neither is the 'Paradise Club,' the main benefit of which seems to be a 20p saving per disk, a free and utterly useless disk head cleaner (no-one needs to use a head cleaner: if it ain't broke, don't fix it) and free catalogues (big deal: they're written by illiterates anyway).

What I think is a deciding factor, as I said last time round, is the presence in the Paradise catalogue of squalid, obscene and illegal material.

I wonder if Neil's mother and 13-year old sister (to whom he refers in his letter) have seen "Hard 13SE: Caught from behind – This one is really blue. Involves a bottom," or "Hard 16SE: Horse Lover – Very dodgy. Don't buy if easily offended"? If the latter is what I suspect it is; then what on earth would it take to offend someone who is not "easily offended"?

Neil's knockdown, why-didn't-I-think-of-that argument goes like this: "We first decided not to include this software within our catalogue but after comments made by fellow ST users we decided to include them, and they have proved exceptionally popular."

Apparently Neil believes that if something is popular it is therefore makes it acceptable. I hope for Neil's sake it never becomes fashionable to boil alive people who sell pornography or construct wholly specious arguments in defence of their squalid little activities.

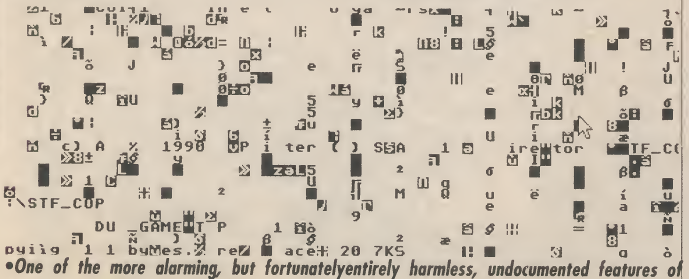
Neil points out the precautions the library takes to restrict this vile material to over 18s, steps which include cheques being drawn only on the account of the customer, with postal orders not accepted.

Good. I don't think it goes far enough, and I believe that distributing such material does nothing for the image of the home computer user. (Imagine what that despicable rag the *News of the World* would make of this stuff!)

There. I have replied to Neil's letter. Would any of his customers like to defend Paradise Computers? Write to Steve Carey, *Express*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.

DON'T PANIC!

Here I sit at my ST (1040STE, mono monitor, a can of John Smiths strong ale at my elbow), tapping away in *Protext 5*. If you use *Protext*, try typing PANIC at the



•*One of the more alarming, but fortunatelyentirely harmless, undocumented features of Protext version 5.*

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XXX please ask for list and state that you are over 18.

command. The results will scare the living bejaysus out of you, John Smiths strong ale or not.

The oddest thing about it, however, is that it only works once in a session.

By the way, if you know of similar undocumented features (a phrase which usually, but not in this instance, means bugs), let me know. Write to Undocumented Features, Steve Carey, *Express*, 30 Monmouth Street, Bath BA1 2BW.

TALESPIN GETS ADD-ON

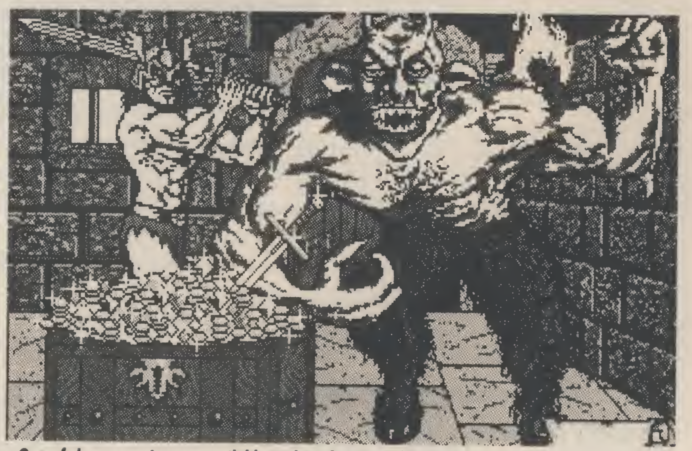
From Deltronics comes *Fantasy Graphics*, 4MBytes of full colour individual drawings squeezed onto one 400K single-sided disk for use with *Talespin Adventure Creation System*, written by Mark Heaton and available at £29.95 from Microdeal (who can be contacted on 0726 68020).

Tailspin is an unusual games programming system which enables you to interact with a series of character laid over backdrops. By clicking on them you bring up speech bubbles and messages that offer you options for the next scene.

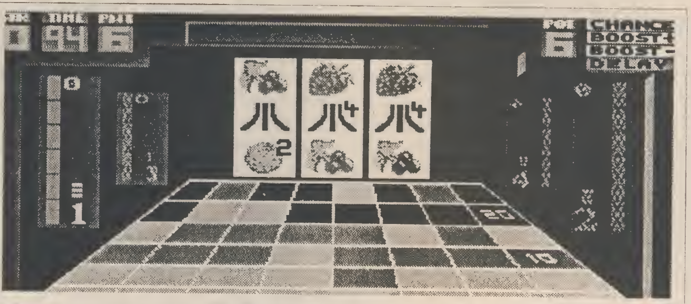
Where it's always fallen down, though, is its requirement that the user be able to create striking pictures in Degas Elite or Neochrome, which is always going to be asking a bit much of most of us.

The graphics disk is the work of the self-styled "Terrible" TC Basset, who I seem to recall (absolute lie: I'm reading from the press release) released *Overlord*, a Talespin program, on the Budgie UK label.

Even with *Fantasy Graphics* you're kidding yourself if you believe you're ever going to be able to market a commercial game using *Talespin*. But for the amateur user that's not the point, for it does enable anyone with imagination, patience and free time to create an intriguing adventure.



• *One of the many pictures available in the Talespin add-on Fantasy Graphics.*



• ***This is what £6 buys the ST games player these days – Digital Dimension's STOS-based Fruit Pursuit.***

PIRATES CLUB TOGETHER

What would you say of an organisation that calls itself The Software Pirates Club (Apart from their inability to use apostrophes, that is)? "Boo," presumably, and indeed, "hiss."

But wait. For TSPC is the work of a young group of software programmers and publishers who are protesting about the high price of ST games in the only way they know how: cutting prices.

Instead of asking £25, £30 or even an extortionate £35 for games , TSPC is selling software at the altogether more palatable price of £5.99.

Still, the company's first release, *Fruit Pursuit* is, as its name suggests, a fruit machine simulator. Written in STOS it does indeed succeed, as the company claims, in harking back to the – I hesitate to say good – old days of the Spectrum and the C64, when games were cheap and looked it, even if they played brilliantly.

Fruit Pursuit is not something I'd choose to spend my leisure hours playing, and it must be said that if it were to be released masquerading as a full price game it would get the sound kicking it would deserve.

But at £6 it may prove attractive to the younger ST user, for whom being able to play an average game he or she can afford may be more important than admiring from a frustrating distance all the £25 games everyone is talking about.

However, the ST comes bundled with so many games that might prove difficult for Digitial Dimension to break through. In any case, I'd still like to wish the company the best of luck.

INDEPENDENT INQUIRY

On Tuesday 20 November there appeared in *The Independent* newspaper an article about

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the first virus to be distributed via the cover mount of a national news-stand magazine. That magazine was the December issue of *ST User*, and that virus was Green Goblin.

- Why was the *Independent* newspaper told that *ST User* asked the police to investigate the circumstances surrounding the virus, when I was told by its publisher that the disk had been corrupted at the duplicators?
- Why was the *Independent* told that the virus was harmless, when it can write to bootsectors and wreck commercial games?
- Why was the *Independent* told that the virus was a new strain, when it was discovered 18 months ago?

I don't know. But I think we have the right to be told.

PAGESTREAM MOVES ON UP

One of the great sagas of the ST has been *Pagestream*, an American DTP program that showed early promise, but which lost its way and became the classic example of that graveyard of software known as BTF (Bugged To Failing-point, is the polite translation).

Now version 2 has been released in the States, and the company which produces it, SoftLogik, is looking to distribute it in this country. If and when this happens – and assuming early judgments that the bugs are now a thing of the past are to be believed – *Calamus*, the reigning heavyweight champion of the ST DTP world, could at last have a fight on its hands.

Steve Carey.

Macintosh

LIKE HOT CAKES

The news from the States is that the Mac Classic is, to put it mildly, extremely popular.

According to MacWeek, America's authoritative Macintosh magazine, Apple can't make them fast enough. Bob Silver, Apple's head of US sales, is quoted as saying that demand is more than twice what the company anticipated. Apparently, although Apple has back orders for all three machines (even though the LC hasn't started shipping yet) almost half of the new Macs bought are Classics.

Here in England, products and offers for the new machines are now starting to appear. Claris has announced a special bundle for the Classic which includes *MacWrite II*, *MacDraw II* and *FileMaker Pro*. Although individual dealers will set their own prices, they are bound to be less than the individual full prices for the software.

Meanwhile, Radius, one of the biggest monitor manufacturers, is rumoured to be developing cards which will allow LC and IIsi owners to attach the Radius Pivot and other large screen monitors. The Pivot is neat because it's an A4 monitor which can be swivelled so that it is in either landscape or portrait format. As you do so, the screen dims and then reappears the right way round. At about £1,200 it's a bit pricey, but it's certainly amusing to watch for a while.

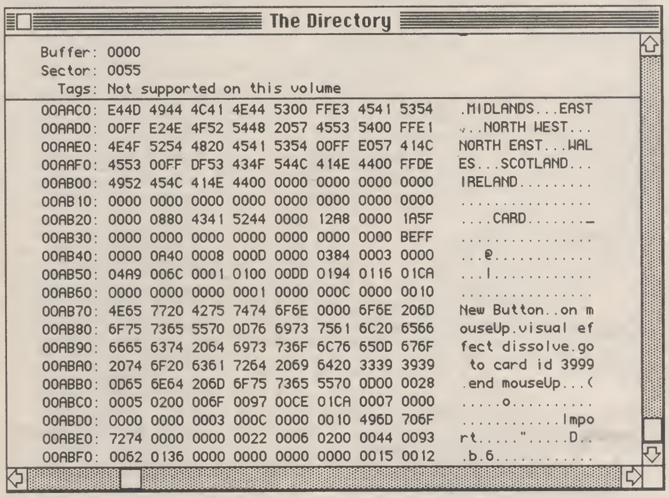
'ANDY 'INTS

By popular request, I've decided to use the rest of this week's column to give you some tips on disk usage. So here goes:

- Some older Macs didn't have high density floppy disk drives – they could only format disks to a maximum of 800K. But if someone formatted a high density disk in one of those drives, you will have trouble reading it on your machine – in fact, you won't be able to. This is because your Mac recognises that the disk is high density, and gets confused when it realises that it hasn't been formatted in the correct way.

Fortunately, the remedy is simple: put a piece of Sellotape over the high density hole (the one that looks like the write protect hole, but on the other side of the disk) and put the disk in the drive. Now the Mac thinks that it's a normal, 800K disk and will read the data with no problems.

But don't trust it too far; it is best to re-format the disk to high density as soon as possible. (To do this, simply remove the



```
    Buffer: 0000
    Sector: 0055
      Tags: Not supported on this volume
   00AAC0: E44D 4944 4C41 4E44 5300 FFE3 4541 5354   .MIDLANDS...EAST
   00AAD0: 00FF E24E 4F52 5448 2057 4553 5400 FFE1   ...NORTH WEST...
   00AAE0: 4E4F 5254 4820 4541 5354 00FF E057 414C   NORTH EAST...WAL
   00AAF0: 4553 00FF DF53 434F 544C 414E 4400 FFDE   ES...SCOTLAND...
   00AB00: 4952 454C 414E 4400 0000 0000 0000 0000   IRELAND.........
   00AB10: 0000 0000 0000 0000 0000 0000 0000 0000   ................
   00AB20: 0000 0880 4341 5244 0000 12A8 0000 1A5F   ....CARD......._
   00AB30: 0000 0000 0000 0000 0000 0000 0000 BEFF   ................
   00AB40: 0000 0A40 0008 000D 0000 0384 0003 0000   ...@............
   00AB50: 04A9 006C 0001 0100 00DD 0194 0116 01CA   ...l............
   00AB60: 0000 0000 0000 0001 0000 000C 0000 0010   ................
   00AB70: 4E65 7720 4275 7474 6F6E 0000 6F6E 206D   New Button..on m
   00AB80: 6F75 7365 5570 0D76 6973 7561 6C20 6566   ouseUp.visual ef
   00AB90: 6665 6374 2064 6973 736F 6C76 650D 676F   fect dissolve.go
   00ABA0: 2074 6F20 6361 7264 2069 6420 3339 3939    to card id 3999
   00ABB0: 0D65 6E64 206D 6F75 7365 5570 0D00 0028   .end mouseUp...(
   00ABC0: 0005 0200 006F 0097 00CE 01CA 0007 0000   .....o..........
   00ABD0: 0000 0000 0003 000C 0000 0010 496D 706F   ............Impo
   00ABE0: 7274 0000 0000 0022 0006 0200 0044 0093   rt....."....D..
   00ABF0: 0062 0136 0000 0000 0000 0000 0015 0012   .b.6............
```

• **FEdit** ***working on a Hypercard stack – not for the faint-hearted!***

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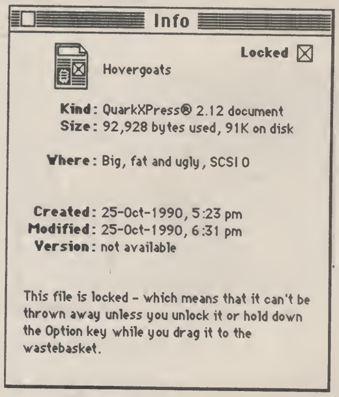
Sellotape and tell the Mac to initialise the disk.)

- If you're copying a folder full of files from one disk to another, it's much quicker to open the folder, select all the files (Command-A) and drag them to the new disk, rather than just dragging the folder. Don't ask me why.
- Always eject disks by dragging them to the wastebasket, rather than by pressing Command-E. The latter method just greys the image, and the Mac could ask for the disk back later. (Although if it does that, pressing Command-full stop a couple of times should make it stop asking.)
- If you have locked a file (by checking the 'locked' box in the Get Info window, which you access by selecting the file and pressing Command-I), the Mac won't normally let you throw the file away.



Kind: QuarkXPress® 2.12 document
Size: 92,928 bytes used, 91K on disk

Where: Big, fat and ugly, SCSI 0

Created: 25-Oct-1990, 5:23 pm
Modified: 25-Oct-1990, 6:31 pm
Version: not available

This file is locked – which means that it can't be thrown away unless you unlock it or hold down the Option key while you drag it to the wastebasket.

•'This is the 'Get Info' window, accessed by selecting a file and hitting Command-I. Clicking on the 'Locked' box locks the file (easy, really...).

While this is often a useful way to stop you trashing something important by mistake, it can be annoying to have to unlock every locked file before getting rid of them. But if you hold down the Option key as you're dragging the file to the wastebasket, the Mac lets you throw it away without warning you.

- If you are mailing disks abroad, make sure that you label the envelope "magnetic media – do not X-Ray". Otherwise, the information could be wiped.
- Never put more than one System file on your hard disk – it can seriously confuse the poor Macintosh. Stick to the rule: One Disk, One System.
- Although it's boring to do, back up your hard disk frequently. There are a number of programs available that will do the task automatically, and it's well worth investing in one of them (I would recommend *Fastback II*, from Riva Systems who can be contacted on 0420 22666). Just think how you'd feel if your 40Mb hard disk fell over and you lost all the data on it.
- If someone gives you a floppy disk which has been formatted on a PC, you can read the files on it by using Apple File Exchange, a program which lets you translate files from Mac to PC format and vice versa. Launch the program and then insert the disk – you'll then be able to move the PC files onto your Macintosh hard disk.

Similarly, to format PC disks from the Mac, go into Apple File Exchange and select 'Erase disk...' from the File menu. Click on the '720K' button and away you go.

POSTCARD FROM AMERICA

Yes, it's that time again. Once more, our intrepid columnist David Morgenstern reports from the heart of Silicon Valley:

"It's supposed to be a quiet week in the Valley. All the electronic beat reporters are covering COMDEATH in Lost Wages, Nevada. Perhaps they're taking side trips, down the road, to the government's auction of 'priceless' memorabilia from the Mustang Ranch brothel to pay taxes owed. They must have been in hot water with their editors for missing the action at Apple Headquarters.

"The Service Employees International Union's Justice for Janitors campaign picketed the joint. It's mad at Apple's refusal to back unionization of their custodial contact employees. It didn't help that a local Diocese bigwig tried to call John Sculley, and was transferred to some minor public relations flunky in the Facilities Department. Ooops!

"Here's a few tips off the old block:

- The version of *HyperCard 2.0* that is shipping with new Macintosh computers comes on a one high density floppy disk. It's being called HyperCard 'Lite' since the scripting and authoring levels are camouflaged. To strip away the protection, type the word 'magic' into the message box.
- Have you ever accidentally deleted a card in *HyperCard* and wondered if you could bring it back? If you recognise your mistake immediately, you can Undo it. This is true of almost all Macintosh applications. But what if it's a couple of cards back? Your data is still hidden in HyperCard until you compact the stack. A file editor (FEdit is one) will give you access to the lost text. Compacting throws out the excess baggage into the ether, where it's really gone for good.
- Some new disk drives combining optical and magnetic technologies will hit the market this year. A number of the drives may use the 20Mb Insite Floptical™ mechanism, that use specially treated 3.5 inch floppies. Other hardware heads report seeing weird Apple-labelled 3.5 inch drives. The story goes that a disk hit the floor during a tour, and instead of the usual magnetic stuff inside, it was shiny, like an optical."

Ian Wrigley

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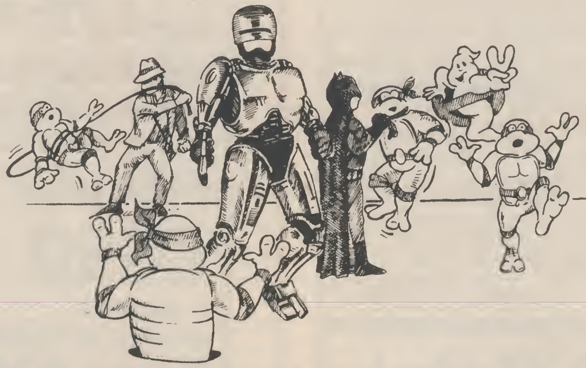

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ADD AN SCSI PORT AND RAM TO YOUR AMIGA

ICD has released the Ad-SCSI 2080, an add-in card for the Amiga 2000, 2500 and 3000 series. The $279.95 card is essentially a RAM expansion unit – for up to 8Mb of RAM – combined with an SCSI port hard disk controller.

Llke a number of the latest RAM expansion units for the Amiga, the Ad-SCSI 2080 uses single inline memory modules (SIMMs). Up to four 2Mb SIMMs can be used in the unit, increasing memory by an impressive 8Mb.

The Ad-SCSI 2080 is available immediately from the Rockford, Illinois-based company. Further details on 0101-815-968-2228.

DISK DOCTOR FOR ST

Inland Speciality Products has released a GEM-based disk doctor program for the Atari ST called *Systutil.* The $39.95 package allows ST users access to many of the facilities PC users take for granted such as file undelete and disk sector editing.

Disk doctor-type programs are comparatively rarer for the ST, presumably because of the intricacies of the ST's operating system and the 68000 microprocessor. ISD reckons it has the problem solved with *Systutil.*

Contact the company at Inland Speciality Products, 3403 North Molter Road,Otis Orchards, WA 99027, United States. Tel: 0101-509-927-4677.

BUDGET TYPING ON THE ST

Magnum Software has come up with an interesting package for the Atari ST called the *ST Typewriter.* But the $19.95 package is not simply a word processor for the ST.

Magnum claims that most of the word processing software currently around is too complex for most users' needs, which is where *ST Typewriter* comes into the frame.

Once set up on any ST with a printer attached, the program turns the ST into a dumb terminal. What you type on the keyboard is printed out – character by character – on the printer. LIke a real typewriter, Tab and end stops are used, and a variety of fonts can be selected from the driver software included with the program.

While the full $19.95 program is commercial, Magnum has released a limited version of the package into the public domain. Version 0.5 of the software can be found on a number of online system and BBSs.

For further details contact Magnum Software, ST Type 050, 2871 South 124th Street, Milwaukee WI 53227 United States.

SUPER-FAMICON UNVEILED

Not content with dominating the hand-held games market with the ubiquitous Gameboy, NIntendo is intent on grabbing a major slice of the TV games console market. The Famicon has done well in Japan, but has yet to achieve a major sales outside its home market.

Which is where the Super Famicon comes in. Just launched in Japan, the unit sells for $167 and features 512K of video RAM – allowing increased virtual screen size (for faster scrolling) and improved graphics.

Thanks to the increased Ram the Super Famicon can support up to four independently scrolling 'backgrounds' on a single screen, which is capable of rendering up to 32,768 colours simultaneously. A key feature of the Super Famicon is its backwards compatibility with the existing Famicon. A Gameboy plug-in unit is promised for the new year which will allow Gameboy cartridges to be used with the new system.

Also scheduled for release in the new year is a modem attachment which will allow access to the Famicon network. This, says Nintendo, will allow software to be downloaded, as well as supporting multi-player environments.

Also tucked away inside the console is a digital signal processing chipset that supports lifelike voice synthesis, along with digital quality music and sound effects.

AMIGA FINALLY BREAKS THE TWO MILLION

Commodore has announced that it has sold the two millionth Amiga has been sold. in the US earlier this month. Is this as much of a milestone as Commodore makes out? But I am not so sure.

Between its release in 1985 and the early part of 1989, the Amiga 1000 sold only around a million units. At this point, I seem to remember, Commodore loudly predicted that the two million sales point would be reached by the spring of this year.

By that reckoning, Commodore is around six months late. Allowing for the usual optimism sales and marketing managers have for their machines, I'd venture that the Atari STE is causing Commodore a few headaches sales-wise.

Additionally, Commodore still does not have a portable machine on the market, despite the fact that Atari's Stacy has been 'available' for over a year now – even if you can't actually buy one in the stores!

GAMEBOY ON THE CHEAP

Do you want a Nintendo Gameboy but are put off by the £70 price tag it carries in the UK?

You could do a lot worse than buying by mail order from West Germany, where the machine costs £45, or the US, where it retails for $80, or about £40 at current exchange rates.

Why the disparity in pricing? Officially no-one is saying, but shop owners in the US say that Nintendo has targeted West Germany and the US as i primary markets outside of Japan to establish a major userbase.

Since the Atari Lynx has not marked up major sales in West Germany, and costs several times the Gameboy price in the US, this seems a logical move. What is even more galling for UK Gameboy users is that cartridges for the Gameboy range from $12 to $25 in the US stores, which equates to £6 and £12.50 in sterling terms.

While out at Comdex, I bought a copy of *Dr Mario* for just over $10 in the local Woolworth store. Why not grab a copy of a US games magazine to check out the prices.

US BANS SOFTWARE RENTALS

One of the major sources of pirated software in the US has been from software rentals. Many users of the Atari ST and Commodore Amiga rent out the latest games, crack the protection system and pass the resulted cracked code online around the world.

Now the US Congress has passed a bill outlawing software rentals and forcing users to buy software. While this won't stop program piracy it should dampen the enthusiasm of those pirates if they have to pay for the packages in the first place.

MAIL ORDER BOOST FOR BRANCH ALWAYS

Regular readers of this column will be familiar with Branch Always Software, the producer of excellent utility packages for the Atari ST such as *Quick Tools* and *Quick ST.* Now the Bellevue Washington-based company has made it even easier for overseas ST user to buy its software by signing up Cave Creek Computers of Seattle. Cave Creek's order line is open from 3pm to 11pm, Monday to Saturday.

Cave Creek is offering *Quick ST 2.2* for $18.95 or *Quick Tools* for $27.95, as well as both packages for $39.95. These prices are discounted from normal prices, and are applicable provided you use a Mastercard or a Visa card to order.

You can write to the company at Cave Creek Computers or telrphone them on 0101-206-783-0933.

THE HOLY BIBLE FOR ST

Spiritware of Seattle in the US has released *Spiritware v2.1*, a Bible text processing system for the ST. Depending on which package you buy, you get the text from the Bible in ASCII formation a disk, as well as a text extraction and processing system.

Bundled with the package is a desk accessory text editor called *Spirit-Ed* which has an Apple Mac-like operation with auto word wrap. The editor interacts with the Bible text extractor, allowing data to be moved quickly from the compressed file system into a standard word processing environment. When installed on a (required) hard disk the *Holy Bible* occupies just 2.5Mb in compressed file format.

The developers say that Version 3.0 of the software, to be released early next year, will have refined search facilities as well as allowing larger chunks of the Bible to be displayed on-screen.

Prices for the range are: $40 for the whole *NIV Bible*, $20 for *NIV New Testament*, $30 for whole *KJV Bible*, $15 for *KJV NT* and $60 for both *NIV* and *KJV* whole Bibles.

Contact Spiritware by writing to Fifteenth Avenue Bible Church, 15211 15th Avenue NE, Seattle, WA 98155, United States. ■

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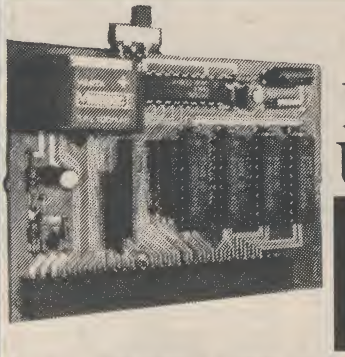

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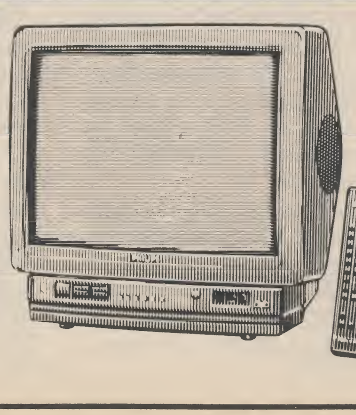

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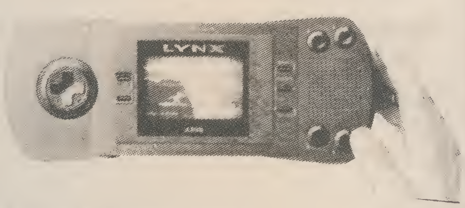

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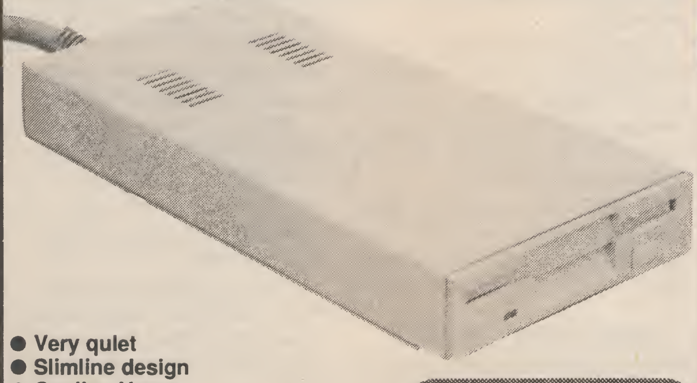

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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

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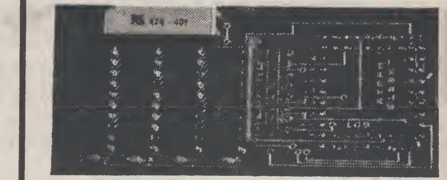

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MAKING CHOICES

IF you know about conditionals THEN turn the page ELSE read on.

The exact code you need to create a program varies from language to language. While the text may differ the concepts and constructs available will be broadly similar, implementing the conditional selections and loops discussed before.

The usual form of making a selection is to use the IF..THEN..ELSE statement, so that the program follows one of two possible control paths at the choice point, depending on whether the condition is true or false; this is a two way select. A series of instructions to be followed in certain conditions, with no alternative if the condition is false, is known as a one way select. Simple languages such as Assembly language and Fortran 66, and even early versions of BASIC, required you to construct a selection using conditional and unconditional branches. The one way select, now familiar as IF condition THEN list of commands would be written in an early BASIC as:

```
10 IF NOT condition  THEN GOTO 50
20 list of commands
50 rest of program
```

A similar construct is used in Assembly language. The condition in the following example is that the al register should be equal to some constant *const* and the skip label marks the point to which control is transferred if the condition fails.

```
      cmp al,const
      bne skip
            list of commands
skip: rest of program
```

In more sophisticated languages, it is not necessary to provide an explicit transfer to a labelled point in this way and the same selection in Pascal reads:

```
IF condition  THEN BEGIN
      list of commands
      END
```

The IF..THE..ELSE two way selection of modern languages is also simpler than in some early languages. The code (see box) shows a two way selection in Fortran 66. The program must be given a labelled point to transfer to if the condition succeeds, where the appropriate list of instructions, list one, is stored. The second list of commands, list two, to be obeyed if the condition is false, must be given directly after the first redirection, GOTO 1. This second list of instructions must be followed by another redirection, GOTO 2, sending control to the labelled point marking the beginning of the rest of the program. If this second GOTO is omitted (a common mistake) then both lists of commands will be carried out if condition fails. The logic of this may be hard to follow at first and figure two shows the flow of control through this two way selection.

Listing of Fortran 66 code for a two way selection

```
IF (condition) GOTO 1
      list two
      GOTO 2
1 list one
2 rest of program
```

The IF..THEN..ELSE construct is easier to use, and so less likely to be used incorrectly. The only significant differences between modern languages is the way in which they mark the end of these blocks. In Pascal, for example, the two way select is written as:

```
IFcondition THEN
      BEGIN
            list one
      END
      ELSE
            BEGIN
                  list two
            END
```

Modula 2 uses END to terminate the construct, while Fortran 77, Ada and modern dialects of BASIC use END IF:

```
IF condition  THEN
      list one
ELSE
      list two
END IF
```

There is rather more variation between languages when making a multiple selection. While IF..THEN statements can be put into a sequence, more complex selections will often be implemented using nested IF statements and this can easily lead to confusion. To select one of three possible sets of instructions, depending on which of the three conditions is true, assuming mutually exclusive conditions, Ada, Modula 2, Fortran 77 and modern dialects of BASIC would use code of the following kind:

```
IF condition1 THEN
   list one
   ELSE
        IF condition2 THEN
             list two
             ELSE
                  IF condition3 THEN
                        list three
                        ELSE
                  END IF
        END IF
END IF
```

Ada and Modula 2 allow the ELSE and IF commands to be combined into an ELSEIF statement, so that the code can be written as:

```
IF condition1 THEN
      list one
            ELSEIF condition2  THEN
                        list two
                              ELSEIF condition3  THEN
                                       list three
                              END IF
            END IF
END IF
```

This is still not very clear and it is difficult to make this confusing construct easier to understand. The problem is exacerbated in languages such as Pascal which do not mark the end of IF statements clearly, eg:

```
IF condition1 THEN
      IF condition2 THEN
              BEGIN
                            list one
              END
ELSE          BEGIN
                            list two
              END
```

It is ambiguous which IF statement the ELSE belongs to. If it is the first IF, then list two will be obeyed if condition1 is false; if the second IF, then list two will be obeyed when condition1 is true and condition2 false. This ambiguity is resolved by the Pascal rule that ELSE statements are almost paired with the innermost IF statement where conditionals are nested. Thus the second interpretation given is correct.

In most cases the selection is to be made on the basis of the value found in a single variable. Where the value of a single expression determines which of a number of statements is to be executed, the CASE construct can be used. This is far simpler to read and understand than nested conditionals, and thus harder to get wrong. For example, if the selection between four possible sets of instructions is made on the basis of the value in a variable X, then this can be coded as a CASE statement in Pascal as follows, where the four values are represented as value1, etc:

```
CASE X OF
      value1:BEGIN list one END;
      value2:BEGIN list two END;
      value3:BEGIN list three END;
      value4:BEGIN list four END
END
```

If no CASE statement is available in your chosen language, you can use a number of sequential IF statements as shown below, provided that none of the lists of instructions alter the value of the variable X, as that could cause more than one IF statement to be obeyed.

```
IF X = value1 THEN BEGIN list one END;
IF X = value2 THEN BEGIN list two END;
IF X = value3 THEN BEGIN list three END;
IF X = value4 THEN BEGIN list four END
```

The CASE statement is obviously simpler than the nested and sequential IF statements and should be used if possible, as it is far easier to make a logical error in a complex construction. As ever, if you are having trouble with a construction, a diagram of the flow of control should clarify matters. ■

- Selecting the next command to be obeyed is one of the basic operations in any programming language.
- A one-way select, often in the form of IF..THEN, gives a command to be carried out in certain circumstances; otherwise the program ignores the command and carries on to the next statement.
- A two-way select, often in the form of an IF..THEN..ELSE statement, gives the computer another command to carry out if the condition is not satisfied.
- Multiple selections and nested IF statements are complicated and can be confusing. Indent the code to make things clearer and remember that languages may have rules about the precedence of ELSE statements.
- If the language offers a CASE selection, using it will make your life much easier.

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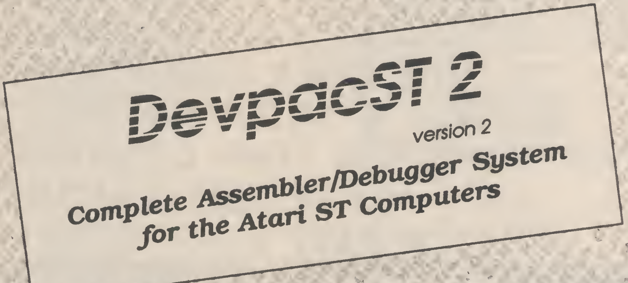
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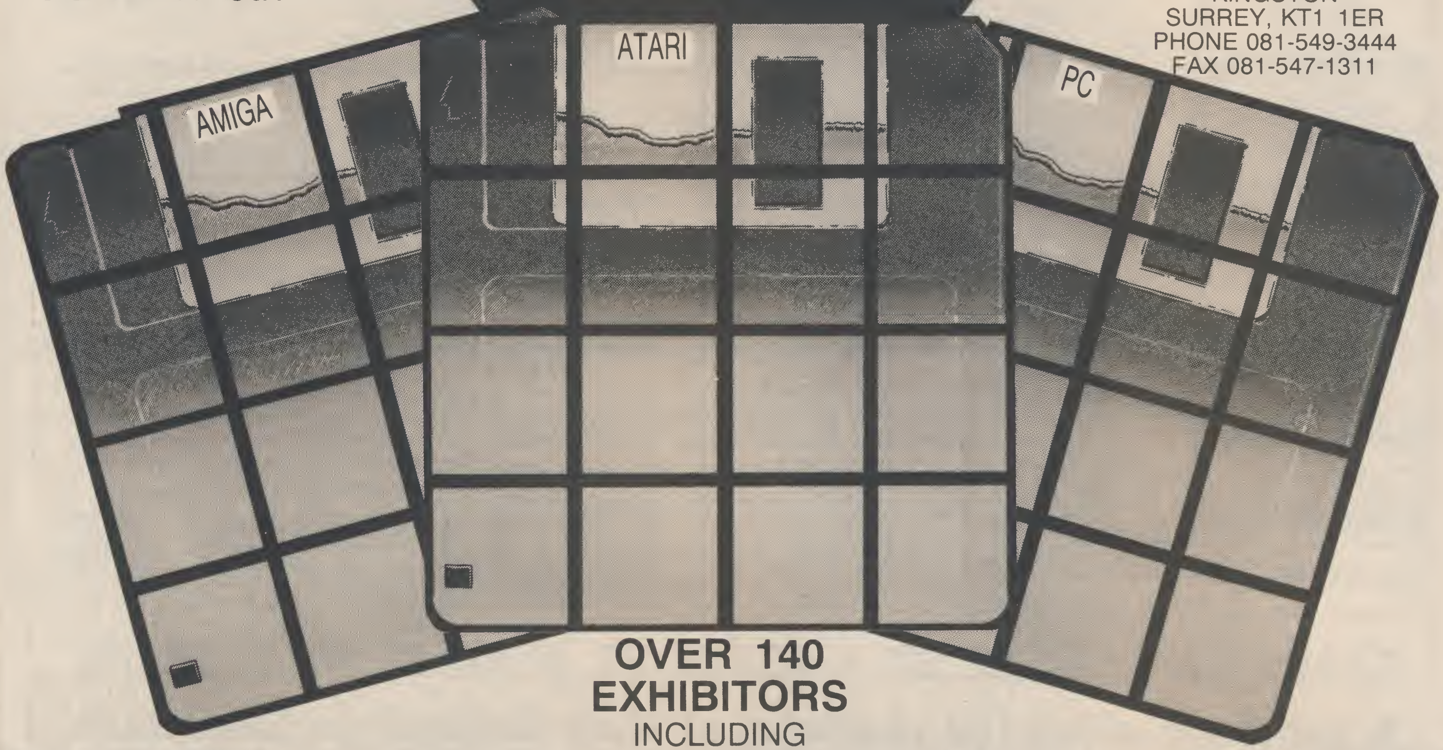

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OPENING TIME

Phew, that was a busy week. Of course it would have been a damned sight easier if they'd let me play with the supercomputer which was in the *Express* office last week. Unhappily with the NeXt saga fresh in his mind – you may recall that I had the world's only NeXt portable stolen from me by a cop in Gwinett county – Andy Editor exiled me to the back of the room with only a PCW for company.

"If you think we're letting you near anything with more than 8-bits for the next 16 years you've got another think coming pal" was the wording [for family reading] of the ed's statement. Fiddley-dum.

There I sat watching the rest of the crew ooooing and ahhing as the gigaflops flopped over the mips like lambs over gates in springtime. Ask me if I care? Of course I do. I like to be on the cutting-edge of technology. It's not that the PCW is not an excellent machine, it is. It's simply that I can't stand the idea of any one other than me having access to techno-goodies.

Take for example my recent jaunt to America. A very kind young American called Mr Gamble took me around Georgia Technical College.

Now, when I went to college we had one BBC Master, a Spectrum wafer drive without a Spectrum, and two blank disks. Well, just one of GA Tech's computer rooms was so ladened with 386s that I almost blew a socket I was sulking so much. Then I was taken to the architecture department's CAD centre. That did it! This was a school goddammit! Loads of colour screens just sitting there showing drawings. And you should have seen the micro computing section. Even the school shop was selling Mac Classics.... for God's sake they were adverts for the Mac at local Kroger shopping malls. By the end of the visit I had held my breath-so-I'll-go-blue so many times that turquoise was my natural skin tint. Why should they have all this and not me? It's just not fair.

But as we all know, life is hard and then you go into an old people's home in Bournemouth. Enough whining – now get out of this column and never come around here trying to alter British politics as we know it.

Letter Spray

Want to see your name in print? Then write to Centrefold. This week's replies by Tim Smith.

Everyone has a valid point of view, don't they? It is the unalienable right of any and every human being to state what they feel, freely and without fear of editing. That's what democracy is supposed to be about isn't it? Here in the Centrefold letters section however, you had better watch yourselves.

Dear Mr Smith,

The 'doughnut' spelling is correct for both England and the USA. Of course, as an Englishman, you automatically assume the English version is correct throughout the UK which quite frankly makes us Welshmen furious. In Wales we scorn such unpronounceable combinations as the 'ough' construction.

It looks like the only way to convince you that I'm not an American is to come down and beat you about the ears with my British passport. So, for my captions prize, I choose you glued to a chair for the fifteen minutes I shall require for this exercise.

Your faithfully, Iolo Davidson, Glos.

Dear Iolo,

Iolo is talking about a comment I made on page 38 of issue 103. I queried his spelling of the word donut as being incorrect outside of the USA. So, yes Iolo, I know that 'doughnut' is the correct spelling. That's what I said.

By the way dual-nationality is possible, so how do I know that you don't hold an American passport as well? As for this glue stuff, well, is violence an answer?

A MESSAGE FROM THE GUVNORS

It has come to the attention of the 'powers that be' that Letter Spray has been showing a distinct lack of computer-related correspondence. This must stop forthwith. From now on no letter will be published unless it contains at least two computer references. If no such letters are received, this forum will cease to be. Thank you for your time.

IN DEVELOPMENT

This is the first of a regular column in which we give the lowdown on the very latest ideas in computing. Of course there is a Centrefold angle on the whole thing so don't expect these ideas to become fact and appear in Dixons much before the year 2032.

This week it's the Milan School of Nanotechnology's alpha test module for interactive creative painting.

The system, called ROMA [Random Omission and Modulated Art] is jointly funded by the Portugese secret service, the CIA, and the Tight Gallery in London's Soho district.

CONCEPT

ROMA's base-concept stemmed from a painting by numbers book given to the colour blind, innumerate child of Prof Gian-Luca Scemo. Scemo noticed that the child's efforts could be sold to local museums for astronomical sums of money as naive art. Being a confirmed socialist he determined to befuddle the world's banking system by creating readily available, cheap software for use on home systems.

MODUS OPERANDI

The system makes use of fractal imaging, random number seeding and a complex algorithm based on cross Boolean dynamics.

SYSTEM REQUIREMENTS

The system is currently Amiga-based and requires 8Mbs of onboard RAM as a minimum. The ideal system will show a full 8192 colours on screen – a monitor and driver are currently being planned in Budapest. The system comes as hardware in the form of a board. It is currently 7 feet wide.

PRICE

Planned price is 123,000,000,000 lire.

RELEASE DATE

Release date for Beta test systems is windowed for March 2011.

Do you have any computer related tit-bits, scandals or scare stories? Do you have any tales which you feel should be told? Well get writing to Tale Spin at the address printed above. We'll make it worth your while....

THE TOSH FORTY

A Tosh Ten Special this week with four charts of factually impoverished claptrap. We kick off with...

TEN QUOTES WHICH MIGHT HAVE BEEN MADE ABOUT COMPUTERS

1) "I have nothing to declare but my Genie"[O Wilde]
2) "Rombo! Rombo! Wherefore art thou Rombo!" [W Shakespeare]
3) "Mother, give me the Sun" [H Ibsen]
4) " A woman is only a woman, but a good Sega is a smoke" [R Kipling]
5) "I think therefore I RAM"[R Decartes]
6) "ROM wasn't built in a day" [Anon]
7) "Give us the tools and we will finish the Jobs" [W Churchill]
8) "A Spectrum is haunting Europe..." [K Marx]
9) "I believe it is PC for our time..." [N Chamberlain]
10) "To BBC or not to BBC...." [W Shakespeare]

TEN PIECES OF COMPUTER RELATED LITERATURE

1) The Prints [Machiavelli]
2) The Hobbit [JRR Tolkien]
3) The Charge of the Lightgun Brigade [R Browning]
4) Joe Bob Goes to the Disk Drive-In [JB Briggs]
5) Tos of the D'Urbervilles [T Hardy]
6) Howard's Wend [EM Forster]
7) ROM at the Top [J Braine]
8) The fourth Protocol [F forsyth]
9) Green Eggs and HAM [Dr Suess]
10) As You Like IT [W Shakespeare]

TEN WAYS COMPUTERS CHANGED THE WORLD

1) The birth of the computer virus expert
2) Man landing on the moon
3) *New Computer Express*
4) RSI
5) Fly-by-wire air crashes
6) The Stock Exchange's Black Monday
7) New Order's Blue Monday
8) Catchphrase with Roy Walker
9) Hole in the wall money machines
10) £1 million banking errors

TEN THINGS NOT TO SAY TO A COMPUTER USER

1) "Have you seen my new magnet?"
2) "I told you so"
3) "What happens if I press this?"
4) "Shall I put the coffee here?"
5) "I thought I mentioned that I was changing the fuse"
6) "Can I have that cable back?"
7) "That's a good score, my five year old did it last night as well"
8) "RTFM"
9) "God, I remember that machine"
10) "Oh, it's only 256k is it?"

There we go. That was easy. Any ideas from you? Well keep them to yourselves!

TREFOLD

OUT OF TOWN TOP TEN

This week's Out of Town Top Ten is rather different from normal. It does not concentrate on the usual single shop outside London, but it does deal with nearly every large town or city in the UK. We proudly present the WH Smith's predicted top ten pieces of games software in the 16-bit and 8-bit markets.

TOP 8-BIT

1) *Teenage Mutant Hero Turtles* – not much of a surprise here what with the film coming out.
2) *RoboCop 2* – yet again this hasn't left any of us in shock
3) *Gazza 2* – his game looks better than his rap sounds
4) *Chase HQ 2(SCI)* – the original was excellent, let's hope...
5) *Golden Axe* – Ughh, slash, hrummmp!!
6) *Strider 2* – Ughh, swipe, leap, hrummmp!
7) *Hollywood Collection* – *RoboCop's* back with *Indie, the Ghostbusters* and *Batman*, a good bet for a hit.
8) *Line of Fire* – Coin-op conversion in a pseudo *Operation Wolf* style
9) *Dick Tracy* – Another film licence, another hit.
10) *Super Off Road* – Vrooom, clank, stall, vroom!

TOP 16-BIT

1) *Gazza 2* – see above
2) *Teenage Mutant Hero Turtles* – see above, above
3) *RoboCop 2* – see above, above, above.
4) *Golden Axe* – look up
5) *Chase HQ 2 (SCI)* – haven't we seen this before?
6) *Indianapolis 500* – Cool racing, and a bitch to beat
7) *Line of Fire* – we've been here already
8) *Lotus Turbo Esprit Challenge* – Gremlin's best for a long while
9) *Wrath of the Demon* – Ex–Bluth animators might strike gold here
10) *Hollywood Collection* – seen it, been there, done it

There you go then. That's what one of the big players thinks that you'll want.

DESPATCHES

News from around the world. What's happening and where? The Centrefold has the stringers with the answers. This week it's Kath Edie, our woman in the Gulf.

"I am standing here in the middle of the desert amidst a hail of silence. Nothing is happening. The only time the ferocious tedium is broken is by the sound of Gameboys being thrown at Chieftain Tanks – you just can't get the batteries.

It is without doubt true, however, that the Gameboy is top gun over here with our boys in the 14th Regiment Queen's Own Sanitary Engineers. Tension is high which is more than you can say for the regimental Tetris high score. That currently stands at 32,353 and is held by Lance Corporal Nobby Hedgewood of Bermondsey.

As for the natives, it appears to be the case that the most popular software is the spreadsheet, especially amongts the women. The Macintosh is not a popular machine. This appears to be less to do with cost and more to do with reminders of rain.

The latest gadget over here is a PC spike protector. These have been fitted as standard to all 14th Reg PCs since the great Andrex tragedy. Several thousand tonnes of puppy-soft poop paper were re-routed from the Falklands when a huge energy surge disrupted the Lotus *1-2-3* packs holding the data. The surge was caused by extended testing of US Earthworm fuzzy-logic guided ground to air missiles. The fuzzy circuits reflected on recent US military history, searched their memory banks for victories which involved missiles and not Jimi Hendrix music, and decided that they were doomed to failure. Chaos ensued.

Aside from this computer error it appears that the microchip military has served its masters very well. Bagdhad has been found by at least three of the Japanese-made targetting computers. Unhappily it was found to be just south of Sunderland by 42 of them.

Finally, the departure of the PM has given rise to the forces' PCWs running innumerable betting forecaster programs. What with Michael Mates being over here at the moment (*this piece was filed before the polling results were announced – TS*) most of the PCWs predictions have been heavily weighted.

That's about it for now. Please send payments in camels. Please send more batteries. "

• The Amstrad PCW. Were these dynamic machines being used to forecast the Tory (sorry Conservative) leadership battle, or not?

FROM THE ARCHIVE

A year ago today Margaret Thatcher was still leader of the Conservative party, John Major was even more anonymous than he is now, and Neil Kinnock was wearing the same tie.. But what was happening in the world of computers? *Express* knew....

EVERYONE (NEARLY) LOVES A COMPUTER
It was reported that one in four people in Great Britain owned a computer. Not only that, but 28% of computer owners were "...finding a use for [their] machine every day." The report was based on a MORI survey on behalf of the Computer Management Group.

POOR POOR PC200
Amstrad was said to be pondering the future of its ill-fated, black and not too proud PC200 machine. We reported "It is now almost certain that Amstrad will soon admit defeat on its low cost PC200. For the first time the company has admitted that it is looking closely at the machine's future in the UK, and at the possibility of discontinuing it in the New Year."

Barry Young, Amstrad's UK managing director commented in an exclusive interview with *Express* : "I don't think we would put the PC200 down as being one of our most successful products."

It wasn't that much of a bad deal for Amstrad however, as the chances of them losing vast amounts of money on the low-cost PC were negligible.

HIDE AND SEGA
Sega, the Nipponese console giants, announced the launch of several add-ons for its Mega Drive console. These included a modem, and a keyboard. The Tele-Genesis modem allowed people to indulge in games (well one game, *Tele-Genesis Baseball*) in multi-player mode no matter whereabouts in the world they were. At the time of going to press - and even now - the new gadgets were only to be made available in the USA and Japan.

SHOW OFF
Computer Shopper announced that it was expecting a 50,000 attendance for its next (this year's) show.

I SEE NO ICEBERG
A new game was due for release, and it was to be based on the great, but tragic Liner SS Titanic. Called *Search for the Titanic*, the computer outing hoped to do better than the appalling films which had cashed in on the misfortune of the great ship. CRL produced Search , and the idea was for players to raise enough cash to find an explore the Titanic.

DRAGON DRAGGIN' ON
A handy tip for computer buyers last Christmas was to seek out and purchase a Dragon 32. At least this was what Andrew Hill said. He was the man behind *Dragon Fire*, the company organising a weekend Colour Computer Convention for owners of Dragon and Tandy machines.

I WISH I'D SAID THAT

"*Computing is computing. Reality is reality.*"
Mark Bateson at the Blackpool Air Centre. Aye and a spade is a spade and there's none so queer as folk.

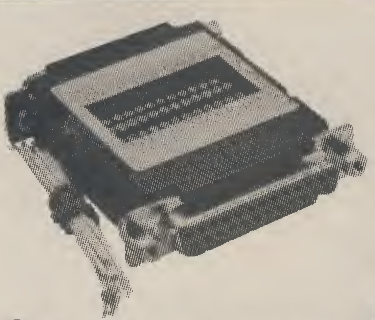
"*The Amiga is a cult machine which looks like seriously taking off.*"
American computer shop assistant.

"*We don't get viruses over here.*"
Another of the same.

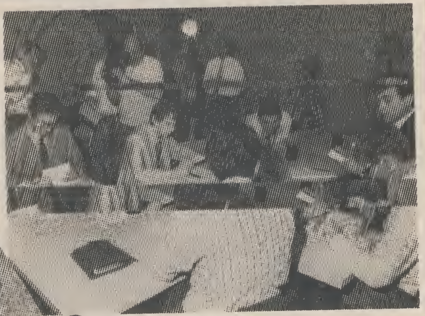
"*Alan who?*"
An interested bar-room observer of the computer world.

CAPTION FULL STRENGTH SPECIAL

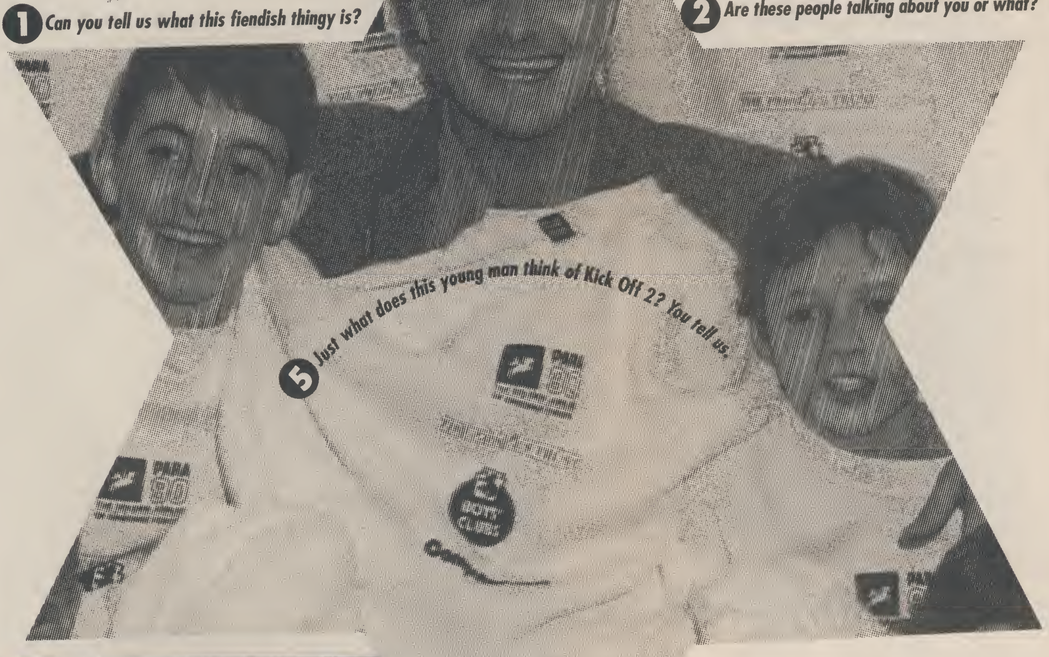
Yes, I promise it, and I have delivered. It's a Caption Full Strength special. Five pictures, five chances to win something groovy. All you have to do is provide a caption for one or all of the pictures which are printed below. "But Tim" you cry, "this is too much of a good thing. We can't handle it." Tough. By the way, answers must be in no later than Monday 7th January 1991. Off we go.....



❶ **Can you tell us what this fiendish thingy is?**

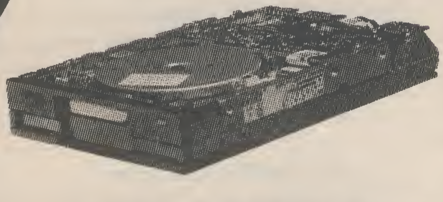


❷ **Are these people talking about you or what?**



❺ **Just what does this young man think of Kick Off 2? You tell us.**

❸ **Not the Masons... who are these chaps?**



❹ **Who do you think could own this tasty kit?**

WINNERS

Yes, it has been sometime has it not? But now I'm back and the winners shall be named. There will also be some changes made to the competitions from here on in. Rules, you know how I like rules (especially if I make them). I promise to send out prizes more often and in greater abundance if you all promise to do the following:

1) State which issue your entry relates to.
2) Send entries on the backs of envelopes.
3) Tell me what machine and disk format you have.
4) Do not attempt to bribe me by sending packets of delicious smarties or almond Yorkie bars.
5) Nuff said?
6) Yes.
7) Great

So here are some winners...

ISSUE 101: The two old buffers, the PC, and the CD. The prize caption came from Clive Parker of Bristol with "Royal mint officials examine new handy sized five pound coin." Jolly well done Clive. Your prize is on its way.

ISSUE 101: The quick quiz answers were: Pet, Atari, and Hard. And the first out of the hat was JM (I think) Stocks of Chesterfield. You win the Gibbo books.

ISSUE 102: The caption to the strange looking machine came from Tom Grimes of Derby with a whole host of attempts like the following: "Sinclair reveals C7 desktop printer" or " New 'words of wisdom' Sellotape and handy dispenser". Go on Tom, write and tell me what machine you have.

More winners follow in the weeks to come, and now we have regained equilibrium after the last few weeks of chaos I hope that a few more of you will enter.

SOUNDING BOARD

From now until Mrs Thatcher is re-elected as leader of the Conservative party we will be running a series of vox pops from people involved in computing.

This week there is a special two subject section. We begin with : Training, Learning and Computing. The speaker wishes to be known as Mr X. He has been providing training on IBM PCs and compatibles for nearly a year.

"During my extensive history of training students computer-wise I have often been asked,'Mr X, what qualifications do you have?'. My response to this ongoing query, answer-wise, is; what do qualifications matter in this young, fresh, hands-on sphere of cutting edge technology? Practice rather than theoreticals, that's my watchword. So what we try and relate here at the Datchworth University of Computers is that experience is more important than pie-in-the-sky. We train in WordStart (sic), Lopus 1-2-3 (sic), Symphonic, (sic) LocoScrit (sic) and much much more.

We have a fully staffed staff of trained staff all of which are willing and capable of teaching your workers. Our rates are very equitable money-wise too. Remember, your competition will eat you alive, make your wife a widow and take presents from your children at Christmas unless you learn how to use your computers with us now. Thank you for your time."

What do you think of computer training. Have you any stories relating to it? Write and tell us.

SOUNDING BOARD II

Violence in Games.

Prof D D Grigson of the Nailsea College of Dynamic Pyschology speaks out.

"I would first like to make it plain that while OrChid Software do indeed fund the college there is total academic freedom therein. Secondly I would draw your attention to a basic coursebook in the field of tension-stress relief; *Myths, Barriers, Shoot-'em-Ups and End of Level Guardians* (1982, Grigson & Borne, 232pp, £33.95, The Nailsea Press). This work is the most astute declaration of the thesis that there is no such thing as a violent game, it's just the way you play it.

If we were living in Roman times we would not think twice about going to see two large men slicing each others parts off with tridents and swords would we? No. Think how many wars there were back then; Punic, Carthaginian, lots of wars. Now in the modern age, computer games which involve skill, hand to eye coordination and blasting fictional aliens have, in fact, stopped World War III. People's aggressions have been retargetted at space invaders, asteroids and OrChid's very excellent Zargouts. I rest my case. Thank you for your time."

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AMSTRAD CPC HOME USERS - Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. 081-898 1090

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AMSTRAD BUSINESS USERS - Amstrad Professional User Club, enterprise House PO BOX 10, Roper St, Pallion Ind Estate, Sunderland SR4 6SN. 091-510 8787

AMSTRAD LOCAL GROUPS - Amstrad Groups Federation, 4 Sutton Roadc, Gorton, Manchester M18 7PN

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APPLE II USERS – telephone 051 9284142 for further details

APPLE MACINTOSH. John Lewis, Macintosh user group, Macintosh House, 11 South Parade, Summertown, Oxford OX2 7JL

APPLE SYSTEMS – Irene Flaxman, Apple 2000, PO Box 3, Liverpool L21 8PY.

ARABIC COMPUTING - Rich Lackey, Arabits, 9 Bellview road, Worthing, West Sussex BN13 1EY

ASHTON TATE SOFTWARE - Silvia Robinson, Baseline, Ashton-Tate, 1 Bath Road, Maidenhead, Berts 0628 33123. Prestel page 43221

ATARI ALL MACHINES – Colin Hunt, BaPAUG, Wimborne Road, Oakdale, Dorset BH15 3EF

ATARI AND AMIGA PC EMULATOR SUPPORT CLUB – SAE to 153 Parrock Street, Gravesend, Kent, DA1 21ER

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ATARI ST SOFTWARE - 16/32 PD library 35 Northcote Road, Strood, Kent ME2 2DH

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C USER GROUP –phone 0865 246490

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COMMODORE ALL MICROS - Jack Cohen, ICPUG 30 Brancaster Road, Newbury Park, Ilford IG2 7EP 081-346 0050 home: 081 579 1229 day

COMMODORE AMIGA - UK Amiga Users Group. Contact 144 Charles Street, Leicester LE2 0OD .0533 510066 voice; 0533 517615

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COMPUCORP. Compucorp University users group c/o Compucorp, Cunningham House, Westfield Lan, Kenton, Middx

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CONFERENCING - Compulink, suite 2, The Scantuary, 23 Oakhill Grove, Surbiton, Surrey KT6 6DU Voice 081-390 8446 CIX BBS 081-399 5252

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FLIGHT SIMULATOR (MSDOS) - Alan Hawkins, SIMFLY Club 2 Henley Manor Raincliffe Ave, Scarborough YO12 5BU

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GENERAL HOME MICROS - Steve Winter, Chic Computer Club, PO BOX 121, Gerrards Cross, Bucks SL9 9JP 0753 884473

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HOUSING ASSOCIATIONS - Caroline Maries, Micro Users Ltd, Beaver Housing society, 23 Lewisham High Street, London SE13 5AF. Telephone 081-318 1126

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NW ARCHIMEDES USER GROUP. Meets every Friday at Citizens Advice Bureau, next to Spectrum arena in Birchwood, Warrington. Ring Paul on 051-426 3915 after 6pm

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REVELATION (PICK) - Malcolm Frame UK Revelation User Gp, 136 St Albans Road, Watford WD2 4AE. 0923 35515

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Gourmet	0474 536654	V21/22/22b
Grainstore	0905 770198	V21/22/22b
Grenadier	0825 762803	V21/22/22b
Hacker'S Delight	0702 523853	V21/22/23
Halfwits Bbs	0272 340310	V22/22b
Hamnet	0482 465150	V21
Harlequin	061-945 3612	V21/22/22b/23
Hastings Bbs	0424 717919	V21/22/22b/23
Hawk'S Castle	0344 411621	Hst
Hazzard Bb	071-737 0505	V21/22/22b/23
Health-data	081-986 4360	V23v
Heartbeat	0734 352032	
Hilary's Board	0277 233468	V21/23
Hot-air Opus	0579 70347	V21/22/22b
Humber Bridge	0482 850785	V21/22/23
Ichthus (trinity 3)	0734 461466	V21/22/22b/23
	0903 700771	V21/22/22b/23
Index Linked	0227 770403	V21/22/22b
Intel Ace	0832 73003	V23v
Islington Bbs	071-704 0760	Hst
	071-226 1248	V21/22/22b/23
Jabulon Bb	0254 59352	V21/23/23v
Jersey Bbs	0534 37779	V21/22/22b/23
Jersey Opus	0534 39389	V21/22/22b/23
Jocks Away!	031-225 5368	V21/22/22b/23
Jolly Fisherman	0754 67796	V21/22/22b/23
Jolly Roger	081-742 1640	V21/22/22b/23
Jusavo	0324 32414	V21/23
Just The Place	0705 258694	Hst
K-wood	0608 83458	Hst
Kashmir'S Bbs	0472 347882	V21/22/22b/23
Kernow Bb	0209 821670	V21/22/22b/23
Key-board	0908 668398	Hst
Keydata	081-676 0072	V23v
Kidlington Bbs	0865 56703	V21/22/22b
King Of The Castle	0233 620228	V21/22/23
Kirklees Opus	0484 665415	V21/22/22b/23
Kleopatra's Pyramid	0602 384281	V21/23/23v
Komputer Knldge	0844 274066	V21/22/22b/23
Kybernesis	081-673 7294	V21/22/22b/23
Labyrinth	051-724 4458	V21/23
Lamplight Qbbs	0705 811531	V21/22/22b/23
Laser Tbbs	0532 438430	V21/22/22b
Lau'S Ql Bb	081-751 6096 Rb	V23v
Lightfinger's Place	0202 485723	V21/22/22b/23
Linelight	0580 212043	V23v
Linx Bbs	0522 511277	V21/22/22b/23
Liquorice Allsorts	0633 279985	
Liverpool Mailbox	051-428 8924	V21/22/22b/23
Liverpool Ros	051-931 4271	V21/22/23
Loch lomond	0389 55762	V22/v22bis
Loft	0442 230461	V21/22/22b/23
Log On In Tynedale	0434 606639	V21/22/22b/23
London Bb	081-455 6607	V21/22/22b/23
London City Mag	081-468 7648	V21/23/23v
London Connexion	081-667 1313	V21/22/22b/23
London Embassy	081-366 1778	Hst
London Guest Hse	081-748 0974	Hst/v32
London Mail Centre	081-534 1200	V21/22/22b/23
London Metropolis	081-519 1055	V21/22/22b/23
London Underground		
	081-423 2233	V21/22/22b/23
Loony Bin	0703 787489	V21/23
Mabbs	021-444 8972	V21/22/22b/23
Mach II Bbs	0242 260 685	V21/22/22bis
Mactel Hq (gm Box)	0602 455444	V21/22/22b/23
Mactel Metro	081-543 8017	V21/22/22b/23
Mactel Phoenix	0473 610139	V21/22/22b/23
Madness Bbs	0603 300947	V21/22/22b/23
Magic Castle Bbs	021-430 3761	V21/22/22b/23
Magic Mushroom	0361 83641	V21/22/22b
Magnum	0274 547006	V21/22/22b/23
Magrathea	0376 24402	V23v
Manor	0980 863031	V21/22/22b/23
Marctel	081-346 7150	V21/23/23v
Matrix	051-255 0225	V21/22/22b/23
Mbbs Leconfield	0964 550745	V21/22/22b/23
Mbbs Mitcham lic	081-648 0018	V21/23
Medway	0634 280031	V21/22/22b
Mektronic Cnsltnts	061-773 7739	V21/22/22b/23
Mercianet	0203 611943	V23v
Merkinstead	061-434 7059	V21/22/22b/23
Merlin	0443 834179	V21/22/22b/23
Mgbbs	0443 733343	V21/23S
Micro Live Bb	081-567 6500	V21
Micro Update	081-877 1529	V21/22/22b/23
Microdeal	0726 65422	V21/22/22b/23
Microlog	0422 71921	V21/22/22b/23
Microview!	081-509 0729	V23v
Midget Gem	0748 834836	V21/23
Midnight Caller	0633 279243	V21/22/22b/23
Mind Boggles	0362 762868	V21/22/22b/23
Mininet 3	0642 672813	V21/22/22b/23
Miracom Support	0473 232540	Hst
Mirage	061-652 1242	V21/22/22b/23
Mirror Ii	0628 810889	V21/22/22b/23
Mirrorworld/quest 1	0883 844044	V23
Mission Impossible	0602 654329	Hst
Mk Board	0908 311005	V21/22/22b/23
Mkbbs	0908 504556	V22/22b
Monkey Tree	0952 677002	V21/22/23
Monusci	0293 545665	V21/22/22b/23
Motor Exchange	0484 435314	V21/22/22b
Multi-bbs	041-649 9043	V21/22/22b/23
Murdoch'S Hangout	021-711 2620	V22/22b
Murky Caverns	081-426 9386	Hst
Mwcfe	0926 421844	V22bis
My Little Phoney	0865 773277	V21/22/23
Nicc Mid-west	0341 250377	V21/22/23
Nite Life	071-976 6807	V21/22/22b
No Escort Required	081-200 3817	Hst
No.1 Bbs	081-958 1689	V21/22/22b
Norpac	0434 608324	V21/22/22b
North Wales Bb	0978 88372	V21/22/22b
North Yorks Qbbs	0423 868065	V22/22b?
Northern Lights	0768 773685	V22/22b
Norwich Onion Bbs	0603 423305	V21/22/22b/23
Nova	0455 553371	V21/22/22b
Nova-net	0274 370760	V22
Odd-ball	081-679 2583	V21/22/22b/23
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23
Organic Garden	081-464 3305	V21/22/22b/23
Out Of The Blue	081-668 7667	V21/22/23
Owl Service	0532 605876	V21/23
P'S & Q'S Tel	051-236 3105	V21/22/22b/23
Pacific Lightning	0732 845338	V22/22b
Packet Bbs	081-547 1479	V21/22/2
Packet Place	0484 435620	V21/22/22b
Palm Beach	0303 265979	V21/22/22b/23
Pazaz Viewdata	0383 620259	V23v
PC Access	071-608 0081	V21/22/22b/23
PC Forum	0322 335348	V21/22/22b/23
PC Serve Shop	081-864 2633	V21/22/22b/23
PC Serve Softnet	0895 420164	V21/22/22b/23
PC Serve Storehouse		
	0494 728094	V21/22/22b/23
Pc-vax Opus	081-800-3549	V21/22/22b/23
Pcamiga Bbs	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pecan Software Bbs	0272 248076	V21/22/22b
Penguin	0943 830820	V21/22/22b/23
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Piston Popper	0424 853361	
Plug-ole	021-472 0256	V21/22/22b/23
Plus And Minus	0559 322766	V21/22/22b/23
Poacher	0476 62450	V21/22/22b/23
Polynet Bb	071-580 1690	V21/22/22b/23
Port Of Call	081-391 5779	V21/22/22b/23
Power Play Qbbs	0698 423669	V21/22/22b/23
Power Tower	0533 880114	V21/22/22b/23
Prestonet	0772 612462	V23v
Project Bbs	0384 401770	V21/22/22b/23
Prometheus	081-300 7177	V23v
Proximity	0793 480028	V21/22/22b/23
Publishing Shop	091-261 5228	V21/22/22b/23
Purely Pc	0232 645942	V21/22/22b
Pyramid	071-239 0871	V21/22/22b
Pyroto Mountain	0895 59071	V21/22/22b
Really Interesting	0582 414991	
Reflex Bbs	0703 685527	V21/22/22b/23
Regency Bbs	0542 33050	V21/22/23
Remote!pcw	0555 851887	V21/22/22b/23
Rivendell	0602 640488	V21/22/22b/23
Rm Tech. Support	0865 796431	V21/22/22b/23
Road Runner	061-483 4105	V21/22/22b/23
Roamer I	0292 45345	Hst
Royalink Uk	0962 66807	V21/22/22b
SAC Bbs	0242 260685	V21/22/23/22b
Sas Bbs	0742 325232	V21/22/22b/23
Satellite Southwest	0392 53116	V21/22/22b/23
Scabs	0909 479080	V22bis
Scary Monster	0734 320297	Hst
Scot Air	0505 36036	V21/22/22b/23
Scothelp-st	031-313 2734	V21/22/22b/23
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
Scs One	0444 236002	V22b
Sector	0772 454328	V23v
Semaj Qbbs	0303 862415	V22/22b
Sentinel Bb	0628 781429	V21/22/22b/23
Shades	0342 810905	V23
Shadowfax	0252 528146	V21/22/23
Shadowland	081-897 0488	V21/23
Shareware Library	0424 83654	V22/22b
Shasby'S Lair	0772 561066	Hst
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sid (acorn Service)	0223 243642	V23v
Signal Box	081-337 6583	V21/22/22b/23
Sin Bin	0532 661536	V23
Sirius	081-542 3772	V21/22/22b/23
Sirius Ii	0494 778425	V21/22/22b
Skull's Tower	081-943 1194	V21/22/22b/23
Sky-line	0603 742273	V21/23/23v
Skyline 1	0234 741691	Hst
Softmatic Bbs	0733 322540	V21/22/22
Software Source	0892 661149	V22/22b
Sounds Of Mercia	0203 682896	V21/22/22b
Sparx	0793 480287	V21/22/22b/23
Split Infinity	0342 712248	V23v
Pook Bbs	0268 767365	V21/22/22b/23
Sputnik Spitfire	0501 31754	V21/22/22b
St London Bbs	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Staines Bb	0784 465794	V21/22/22b/23
Starbase One	071-733 3992	V21/22/22b/23
Strange Brew!	081-665 5038	V22/22b
Stun User Network	061-429 9803	V21/22/22b/23
Summer Wine	0484 653234	Hst
Sunburn Inc.	021-449 5269	V21/23
Super Ops Bbs	0782 284081	V21/22/22b
Swindon Newc Bb	0793 616683	V21/23
System-c-v	0403 50607	Hst
T.a.b.b.s.	0533 517615	V21/22/23
Tabbs	0225 743797	V21/22/22b/23
Taecomm	0994 6709	V21/23
Taff'S Retreat	0834 4562	V21/22/22b/23
Tardis	0772 27236	V21
Tasque	0355 222664	Hst
Tasug Opus	0904 760129	V21/22/22b/23
Tavern	081-445 6514	V21/22/22b/23
Tbbs-rovoreed	081-542 9767	V21/22/22b/23
Tequila Sunset	0703 867786	V23v
Terminal Net 5	0402 456135	V21/22/22b/23
Terminal-net	081-423 5262	V21/22/22b/23
Tharr Bbs	0234 261804	V22/22b
Third Wave	071-585 3163	V21/23
Three Kings	0354 56267	V21/22/22b
Track 83	0953 851351	V21/22/22b/23
Trans-atlantic Res.	0375 25375	V21/22/22b/23
Transylvania	0274 621668	
Tranz-com Bbs	081-952 6273	V21/23
Trinity I	0392 410210	V21/22/22b/23
Trinity Ii	0367 22764	V21/22/22b/23
Tug Ii	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone Ii	071-608 1485	Hst
Typesetter's Wkshp	0274 491606	V21/22/23
Uk Healthlink	0942 722984	V21/22/22b/23
Unisys Etoi Bbs	081-453 5739	V21/22/22b/23
Unit One	0285 713688	V21/22/22b
V.i.t.a.s.	021-749 5860	V21/23
Valente'S Bbs	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048 Rb	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971 Rb	V23
Voyager Bbs	061-725 9580	V21/22/22b/23
White Lightning	0635 37259	V22/22b
Whitehall Pent	071-930 3903	V21/22/22b/23
Wild Imaginings	091-263 4303	V21/22/22b/23
Winchester Remote	0962 69322	V21/22/22b/23
Wolverhampton Ros	0902 745337	V21/22/22b/23
Womble Base	081-979 9606 Rb	V23
Woodgreen Bbs	081-889 5624	V21/23
Yugo Bbs	0734 753648	V21/22/22b/23
Zeus Bbs	0487 710487	V21/22

Logical choice for on-line shopping

Before we go any further, it must be said that Logical BBS looks like a thinly disguised shop. Within seconds of logging on you get zapped by a host of bargains and on-line computer shopping. If you're poor keep your credit card welded into your wallet while on line or you could find yourself with more bargains than you'd intended.

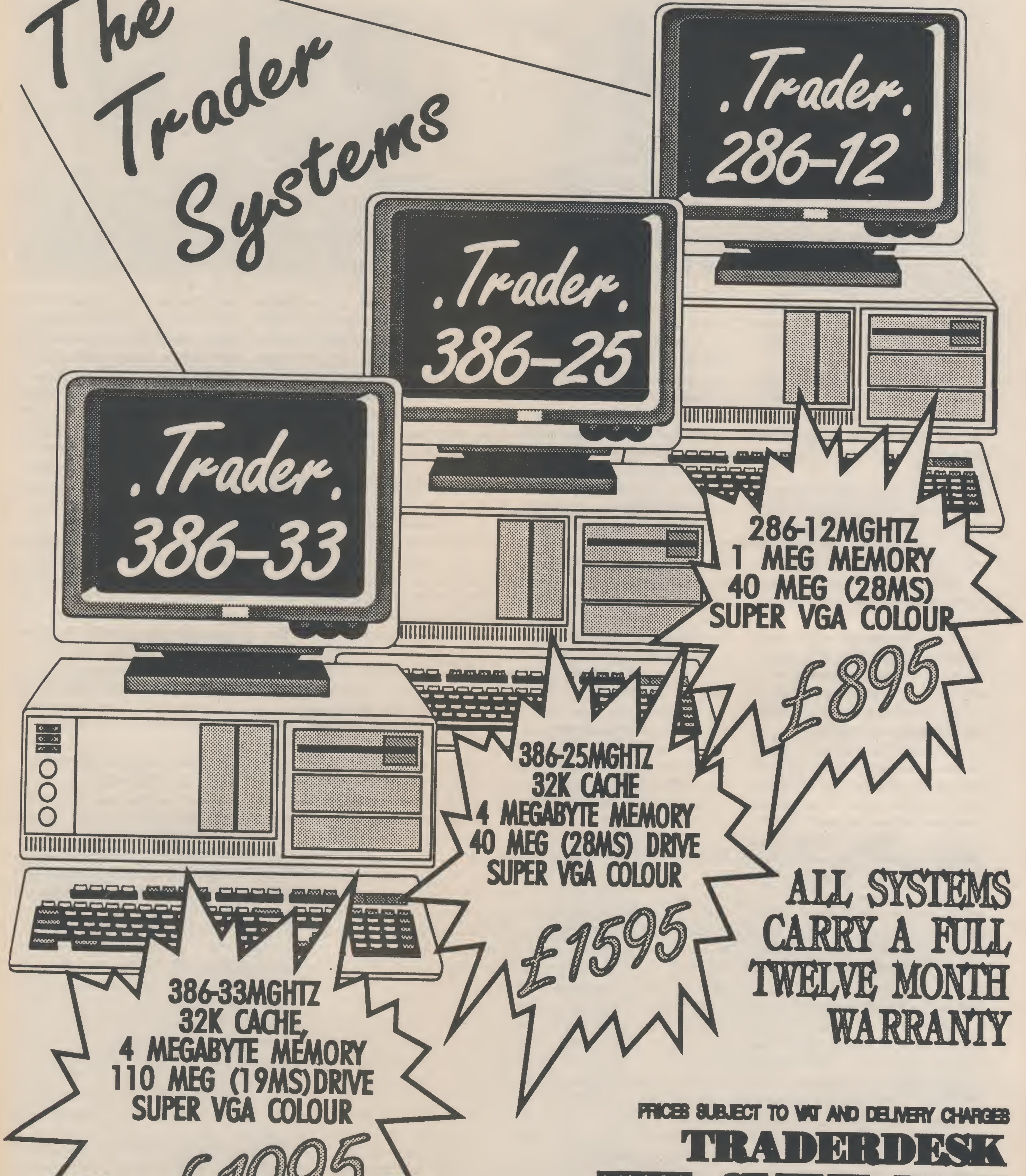
Other than the shoppery-pokery there's a fairly lively but outdated news section and even some drivel about *Express* editor Andy Storer (who doesn't even appear on the userlog).

All of this apart, a lot of work seems to have gone into this Preston-based BBS.

Logical BBS details:

Speeds: 300 to 2400.
Telephone: 0772 623167.
Times: 5pm to 9am

The Trader Systems



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TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■ HELP! More ST questions

First of all, thanks for printing my earlier letter so quickly - I got the cable and everything is fine now.

I'm afraid this is going to be rather a long letter, as I can't explain my problem briefly. Well, it's not a problem really, it is just that I have so much money to spend on my computer, that I don't know what to buy.

I currently own 3 STFM's – two have a meg memory, and the third has a half meg and I don't know what to upgrade to! I want a hard disk next (the FAST hard drives from Third Coast Technologies are extremely tempting - would you recommend one?), then a modem and a colour monitor.

Could you please tell me which modem and monitor to buy within my price range? I need a good modem that I will be able to keep when I eventually upgrade to a different machine and I wish to be able to keep the monitor, if possible.

I have heard that multisynch monitors are great, but are they really that good? If I get such a monitor, I will also have to buy a separate mono monitor for use with one of my other machines, so would I be better off buying a normal coloured monitor, and a separate monitor? The machine I need the colour for is my main machine and the only 'serious' software I run on this PROTEXT, which I find fine in medium resolution.

Part of my substantial budget will be going on the latest version of PROTEXT, as I consider this to be the best package I have ever bought for any computer.

Now comes the real problem – the budget I have will also allow me to purchase one of the new TT beast from Atari. However, nobody I have spoken to will give me a straight answer as to whether the TT will run all ST software. What I want is to be able to play simulations mainly by Microprose. Have you any idea if this will be possible, or would you recommend just keeping my ST's and buying the extra addons?

I know I get a monitor with the TT, but I would have to save up for an external hard drive (yes, I would still want one, even though the TT has an internal one) and a modem all over again.

Please help me with my dilemma as I just can't make up my mind!

Cheers.

Dave Palmer, Yarrow, South Tyneside

1) Don't bother with a TT until they're a bit more common on the ground.

2) Any Hayes compatible modem that's BABT approved and will tootle along at 9600 baud will cost you an arm and a leg now, but the cash saved by going eight times as fast as the standard (and pedestrian) 1200 will help keep the comms mega phone bills in check.

3) The Third Coast Drives that you seem to have set your heart on are indeed a splendid piece of kit and won't break the bank any more than any other ST hard drive.

I won't recommend a specific monitor as beauty is in the eye of the beholder. Go to a reputable computer dealer, see what's on view and pick one that does the job that you want.

Multisync is fine but some people find it hard to work with so try out the monitor for some time before deciding.

To throw you a curved ball, why not pop down to your nearest Apple Centre (Yellow Pages) and take a peek at the current much cheaper entry level Macs. You can afford a whizzy colour Mac with the cash you were thinking of spending on peripherals,

■ HELP! Boxing clever

I have this thing about fiddling with computer equipment, and at the moment I have an urge to mutilate and cram a load of my equipment into an Amiga 2000 system box! To be more precise, I have an Amiga 500, half Meg upgrade, an ST506 42 Med hard drive and the appropriate Spirit HDA506 controller/converter. What I would like to be able to do is to throw all of this (and possibly the PSU) into a nice big system box, such as for the A2000. I have already reduced to parts and reassembled most of my kit, so I am fairly confident of what I am doing, and I'm not too averse to drilling, sawing, soldering or chip fitting to undertake any reasonable changes.

Is the above task possible? I have looked at the unofficial A1500 upgrades but the system boxes look too small to hold all of the equipment that I would like. Is it possible to get empty Amiga 2000 system and keyboard casings anyway, or could all of this be put into a largish PC system box which I could readily get hold of quite cheaply? I have looked at the Commodore offering of the official A1500 upgrade, but I'm not sure that they give just the empty casings.

If one of the above ideas is possible without too much expense, would there still be room for later expansion such as memory, a bridgeboard, or a 2nd floppy drive? I know any answers you find to this letter are unlikely to help many other readers, but I'm at a loose end as to where else to go for help. If you can't help, can you point me at someone who can? Thanks a lot.

Graham Dash, Alva, Clackmannashire

Take yourself along to the next All Formats show at the Horticultural Halls in Victoria where you'll find loadsa guys ready to sell you ex-IBM system boxes and everything you need to fill them including heavy duty cooling fans to soothe the savage beast.

■ HELP! Amiga PASCAL

I have started an A level course in Computer Sciences and so have to learn Pascal programming language. In the manual that came with my Amiga it says there is a pascal language for it. Please could you tell me if this is true and, if possible, tell me where to obtain a copy. This would be of great help to me for homework etc.

Paul Connell, Newport, Gwent

There was only one version of Pascal for the Amiga available some time ago from MetaComCo, but after it went to that great software house in the sky, the Amiga world was left with a Pascal void. If you need to learn Pascal for a course, you could try some of the Amiga PD libraries as there are PD versions available. They aren't particularly well documented, but it should give you the kick off that you need to get started.

■ HELP! Apricot Jam

I am in possession of a 1984 Apricot Xi (10mb Winchester - 740K RAM), running a package called 'Open-Access'. Right, now you've stopped laughing, maybe you can help me! When I load the package, it appears to function normally except that the cursor is stuck in the top left corner of the screen, or at least a visible cursor is stuck up there, as the current test-entry position has as invisible cursor that responds correctly to field formats etc.

I have contacted SPI in California who wrote the package, who informed me they thought the Apricot needed some special 'EXE' file to be run first in order to enable their program to function correctly, but they weren't sure! One of the disks supplied with the computer has a config.sys file that looks for 'XFIBM.COM' – which is not present...could this be the "special" file I need?

If you can not help me, maybe you know of an Apricot users group or someone who can? Until then, I am stuck – word processing with an invisible cursor is, well, different!

K D Winch, Uplands, Swansea

Better than that, why not try Apricot technical support. For on-line support the Apricot BBS is open round the clock and on the occasions when I've had to use it (for an elderly F1) the support has been quick and freely given. The Magic numbers are 021-456 2401/2 8N1 V21/22/23/22bis. Failing that, there's a voice number on the same exchange that eludes me, but I'm sure directory enquiries can help.

■ HELP! Apricot sausages

Could you please either send me the address of the Apricot user group based in Perth, *Express* 105, or please forward my name and address to them.

I have an Apricot Xi which I would like to be able to use to its true potential, but I'm handicapped by a lack of software and help.

Stephen Bateman, Dukinfield, Cheshire

So why not take the advice elsewhere in this weeks Tech Tips and contact the good chaps at Apricot.(Details elsewhere on the page)

■ HELP! Arch emulator

I have an Amiga 500 and I would like to transfer work from it onto an Archimedes that we use at school. Please can you tell me if there is such a thing as an Archimedes emulator for the Amiga 500. How much will it cost? Where can I get it from? And is it available on PD?

M Gulamali, North Greenford, Middlesex

The Amiga doesn't have enough on board hardware to emulate the Archimedes. The Arch runs RISC (Reduced Instruction Set Chip) architecture while the Amiga is based on the more conventional Motorola 68000 processor. To put it in its true perspective, while a Lada Samara and a Ferrari Testarossa are both motor cars, but you can't get five passengers in a Testarossa because it hasn't got the hardware capability. A pity but that's the case. You can't emulate an Arch with an Amiga and a Testerossa just ain't got enough seats.

■ CERTIFIED! Insane

I am looking to move up into the world on MS-DOS and make use of the wealth of available software. My friend (Seymour Girlies) says that if I wrap my ZX81 in a blanket and hit it with a hammer every week it will overheat and breakdown regularly. Is he right or do I need extra hardware to be fully Amstrad PC1512 compatible? I am also looking to buy a computer to download telesoftware and decode radio morse. I was told to get the SAM Coupe because apparently MGT are good with receivers. Is this correct? The only problem is I don't know what has the working one.

Josephine Wimming, North Humberside, Scotland

You are a Cadess and a Bounderess. Those cheeky cheerful chaps down at Sam Computers have enough on their hands without wicked witches like you taking the squirty stuff.

May your antenna go limp and your floppies fall out of their protective sleeves. As to your question about the ZX81 and the 1512, you can get arrested for that sort of machine specific bestiality in civilised countries.

■ HELP!M-M-Maplin again

I have been buying your sister magazine 'Amiga Format' for over a year, but I am a recently new "Computer Express' reader. What I want to know is if anyone anywhere has any way of utilising the AM7910 modem chip, as advertised in the current Maplin Catalogue, with the beloved A500.

I have the pin allocations for the serial connector in my user manual for each pin on the chip in my Maplin Catalogue, but being only interested in the computing side and only really having basic experience of waving around my soldering iron, I am hoping you or some other mortal being knows.

Andrew (The Groover) Norris, Teignmouth, Devon

You can indeed utilise the modem chip in a mega Maplin project (or so I'm told by our resident modem fettler).The answer is to either ring the number on your Maplin catalogue for details of the project book carrying that job or log on to a BBS where modem building is on the agenda. (Aspects BBS from the *Express* on-line list should help and Sysop Dave Gorski is the only chap that we know that can make a modem by rubbing a boy scout on a horse's hoof while setting fire to a swiss army knife with a magnifying glass.)

■ QUESTION! A5000 or not?

Being an avid Amiga user and reader of your mag I was wondering if you could help me with a slight problem that has arisen.

I'm considering buying the new A5000 by Solid State Leisure. Now, I received some info from them (thank you very much Solid State) but the details written down failed to answer some rather basic questions that I wanted to know, like is the unit 100% compatible with existing software?

Also, does the unit allow you to switch back to the 68000 so that you can access the 8Mb that the old 68' allowed? Which configuration is the best to get? I use my computer for may purposes: Communication, video enhancement i.e. Genlock word processing, in fact you name it I use it. Once I've bought let's say the 16MHz version? And would it be worth while getting the co-processor as I do use a lot of graphic programs?

So what it all boils down to is which set up would you recommend to a general purpose user?

D Tweedie, HMS Hurworth, BFPO Ships

With your letter in hand, I approached SSL for the loan of one of their A5000 boards but unfortunately they were selling so well that there wasn't one available to review. Should the A5000 ever become so unpopular that SSL deem to send us one, we'll answer your questions

■ HELP! more leads

I have recently purchased a second-hand Atari 10405TF and Sony KV-M14U trintron television, not knowing they were not compatible with ordinary SCART leads (something to do with the neutral roll). I would be extremely grateful if you could print in *Express* an address of where I could purchase a compatible lead.

Stuart Thomson, East Kilbride, Scotland

Try RSD connections on 0992 584205. They seem to be able to supply electric string to connect most electronic twidgets together.

■ HELP! Atari Monitor

I am currently looking for a second-hand monitor, and am a bit confused as to what type is suitable for my STFM.

I have seen many adverts for 'CGA colour monitors' for very reasonable prices. Is the CGA standard capable of utilising the Atari's output to the full? Also, is the Philips CM8833 as sharp as the Atari SC1224?

In short, what resolution/dot pitch and input signal (RGB, composite etc) requirements do I need from a monitor for it to do my ST justice?

K D.Winch, Uplands, Swansea

The Atari seems to work best with an RGB monitor. The Philips monitors with a SCART connector are generally the simplest to use as the ST/Scart lead is simple to get. Various other monitors will work though. We got an Amstrad CPC colour monitor working off the back of an ST and colleagues report varying degrees of success with other RGB beasts.

As long as you can find out the pin outs for the monitor (those for the ST are in the manual) you can get a suitable lead made up.

■ BAH! Silly boy

I have two TV's with scart sockets, the large one can be used for my Amiga or to watch TV, I can watch TV while my Amiga is still connected to it and I don't have to turn my Amiga off. The small one is similar except to watch TV I've got to turn my Amiga off as every channel shows the computer screen. Is there a way I can watch TV without turning my Amiga off? Can I fit a switch to the scart lead? If so, how?

George Garven, Ayrshire, Scotland

If you really want to watch TV while your Amiga uses your electricity, you could probably persuade a competent computer repair person to make the lead that you need, but is it necessary?

If you want TV and Amiga plugged in and on at the same time you'd better think up a few good reasons if you expect me to supply the answers. I await your letter.

■ OPINION! My machine's. . .

I have just been reading the news about the new Mega STE, and this is my opinion.

The Mega STE looks very impressive, by far an improvement over the Amiga 1500 PHC. But I would like to point out the A3000 is more in the competition league.

The Mega STE costs £799 inc. VAT, it has a 6 bit 68000 running at 16 MHz. The A3000 costs £649, and a 32 bit disk based ARM 2 chip running at 8MHz. The ARM 2 processor runs around 5-6 times faster than Mega STE.

The advantage in not only speed, but everything else. The A3000 has much higher resolutions than the STE and can display far more colours. The A3000 can display 256 at a resolution of 640 x 256 or with a multi-synch monitor 640 x 480 or 640 x 512. Also with a dedicated monochrome monitor it can achieve up to 1152 x 896.

The Mega STE can display a maximum of 16 colours at a resolution of 640 x 400 in monochrome, black on white.

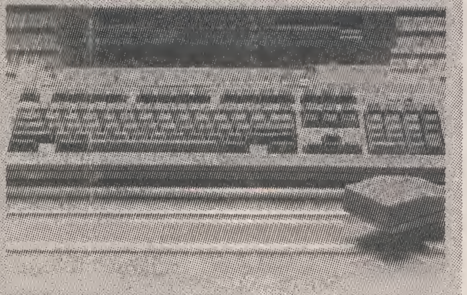
In the sound department, the A3000 has 8 channels of true stereo sound. In saying 'True Stereo' I mean you can actually position each channel in one of 7 positions. It also has a sampling range of 3KHz.

The Mega STE only 4 channels of stereo sound, you can not position any of the channels at all. It has several set sampling rates ranging from 1 KH to around 40KH.

You may be thinking to yourself "But the STE has far better DTP software than the A3000, but it is not true. The Archimedes and A3000 has already amassed a vast range of fonts (all Post Script or compatible outline fonts), about 5-6 DTP packages and two direct laser printers. Of all the DTP programs, *Impressions 2* is by far the best. It features absolutely everything found in a Macintosh DTP program. and more. It can use colour, 256 levels of grey and structured graphics (Draw Files).

Direct laser printers are far better than any Post Script compatible LP. This is because they use the A3000 or Archie to process all the date and drive all the printing. Already there is a 600 x 600 dpi printer available.

Already the Archie has five mono scanners and I colour scanner. All can scan up to 400 dpi and can display an image with grey scales if needed. On the games front, I believe the Arch is perfectly adequate for the typical person who would consider either a Mega STE or A3000. But if you want REAL games, then take a look at Nevryon and Apocalypse from The 4th dimension, truly more superior to anything I've seen on my old



• Archie makes a good impression.

Amiga. If you can not decide what to choose out of the two, I strongly suggest the trial run offer from Acorn for the A3000 learning curve package. After that, try a Mega STE if you can. I do not want to come across biased, but I am just putting a point forward that you missed in your article.

Simon Grierson, Meopham,. Kent

So now you've had your say, I hope you feel better. It only remains for me to say that my machine is better than your machine. (Unless you too own a PD2)

MICROSMART

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Hero's Quest (1 Meg)	–	£23.99
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Kick Off 2 + World Cup	£13.99	£15.99
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Budokan	–	£16.99
Cabal	£13.99	£16.99
Carrier Command	£14.99	£14.99
Castle Master	£16.99	£16.99
Cavadar*	£16.99	£16.99
Chaos Strikes Back	£16.99	–
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Chase HQ	£13.99	£16.99
Colorado	£16.99	£16.99
Combo Racer	£13.99	£13.99
Corporation	£16.99	£16.99
Commando	£13.99	£13.99
Commando War	£16.99	£16.99
Conflict Europe	£16.99	£16.99
Colonels Bequest (1 Meg)	–	£26.99
Conquest Camelot (1 Meg)	–	£26.99
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Dragon Spirit	£12.99	£12.99
Dragons Breath	£21.99	£21.99
Dragons Lair (1 Meg)	–	£26.99
Dragons of Flame	£16.99	£16.99
Drakken	£21.99	£21.99
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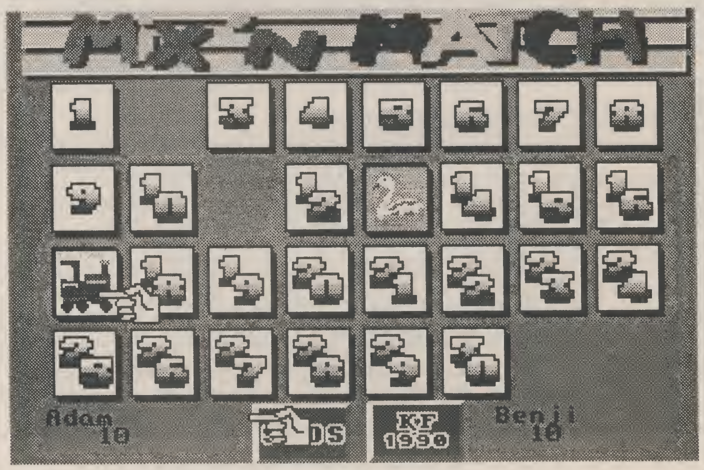
THE PD COLUMN

The latest freebies available in the Public Domain include a deceptive memory game and a disk full of frustrating strategy software. Adam Waring casts a critical eye.

Mix 'n' Match • ST • The Other PD Library

Mix 'n' match is a memory game which begins with thirty two cards placed face downwards. Two players then take turns to flip a pair of cards over. If the pictures on the cards match then they are removed and your score goes up. Every time you make a match, you get another go. This goes on until all the cards have have been removed.

You can quite easily play this game with a pack of playing cards without even turning on the computer. But the computer version is very bright and colourful, and saves you the bother of having to shuffle the cards and laying them out between every game.



•Mix 'n' Match: *pair up the cards to win the game.*

There are three levels of difficulty, though all contain the same number of cards. What makes each successive level harder than the proceeding one is the type of pictures on the cards.

On the easiest level the pictures are all very distinct, depicting clowns, boats and other instantly recognisable objects to which you can easily put a name. On the middle level the pictures are very geometrical - squares, arrows, circles etc - making it much harder to recognise matching cards.

By the time you reach the top level the game is almost impossible. All the pictures are practically identical, the only distinguishing marks being the colours and position of the objects on the cards.

The game has been written in STOS, proving once again how powerful and versatile this language can be. It's a pity the game is restricted to two players. Then again, I suppose a one player game against the computer would be a bit pointless - with an infallible memory- the computer would win every time!

Various Games One • Amiga • Extrax PD I G003

The only common element shared by the four really rather varied games on this disk is that they all tend to rely on strategy rather than arcade action skills.

PD Chess is indicitive of the style of the disk, and is a fairly decent game. The board is represented by an old-fashioned two-dimensional aerial view. There's no slick pseudo-3D routines here. The program's author has concentrated instead on the gameplay.

The difficulty level is dictated by the computer's response time, which the player sets at the beginning of each game. The default is 60 seconds, but being a very occasional chess player (about once every six years), I changed it to one second. Surprisingly, I managed to thrash the thing.

It did put up a good fight, though. All the moves it made were sensible so I

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229: RAF Megademo: (2 disks): Some great animation on this one
230: Red Sector Megademo: (2 disks): Simply one of the best around.
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suspect on a higher level it would have left me standing.

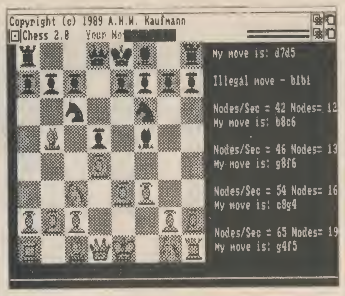
There are some very useful options available from the pull down menu. You can set up boards to your liking, so that, for example, you can play out the problems set in newspapers. If you make a disastrous move you can cheat by just skipping back a couple of goes while nobody is looking.

When you really get stuck, you can ask the computer for a hint. It will evaluate your position and recommend a move. But if after all this help you still find yourself in a totally hopeless situation there is one ultimate course of action available: you can swap sides with the computer.

WHERE TO GO

The Other PD Library, 108 Kenmare Road, Wavertree, Liverpool L15 3HQ. Telephone 051 7344465. If you've looked all over the place and can't find what you need, why not try The Other PD Library? Prices start at £2.50.

Extrax PD, 354 Eden Park Avenue, Beckenham, Kent BR3 3JL. Looking for a little extra for your Amiga? Extrax may just be able to supply your needs, with demos, games and utilities. The copying charge from these guys is £1.50 per disk.



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Chess 2.0   Your Mo

My move is: d7d5

Illegal move - b1b1

Nodes/Sec = 42 Nodes= 12
My move is: b8c6

Nodes/Sec = 46 Nodes= 13
My move is: g8f6

Nodes/Sec = 54 Nodes= 16
My move is: c8g4

Nodes/Sec = 65 Nodes= 19
My move is: g4f5
```

• ***Check out* PD Chess.**

Also on the disk is *Tiles* which bears more than a passing resemblance to another ancient oriental game, Mah Jong. It's a patience game played with Mah Jong-style pieces which are stacked up and laid out in a pattern.

The aim is to take them all away again. But you can only do this by removing tiles one at a time and only if there is a gap to the left or right of the one you want to take away.

The problem is that some tiles are hidden beneath others. You must decide which ones to take from the board in the knowledge that if you make the wrong decision you might trap yourself and be unable to finish the game.

It's fascinating to play, and incredibly addictive. The only criticism I have is that all the tiles are very similar in colour so it can sometimes be difficult to see matching pairs.

The final two games on the disk are *Battleships* and *Tetris II*. *Battleships* is a version of the old pen and paper game. You have to sink the computer's fleet before it sinks yours.

As ever, there is no skill involved and the outcome is down to pure luck (at least that's my usual excuse for losing). You just randomly choose squares, keep your fingers crossed and hope that you eventually hit something.

I'm sure that *Tetris II* doesn't need any introduction. Unfortunately my copy wouldn't load for some reason, so I can't tell you exactly what goes on. But at a guess I'd say that it could just possibly involve blocks falling from the sky that need to be rotated to form rows.

PD NEWS...EXTRA...EXTRA...

Another new PD library has joined the ranks of those supplying Amiga software. Although a newcomer, Extrax Public Domain already has an impressively large catalogue, boasting something in the region of 140 disks crammed full of Amiga software.

To expand even further, the library is willing to swap disks on a one for one basis. Its disks cost £1.50 each.

You can contact by writing to: Extrax PD, 354 Eden Park Avenue, Beckenham, Kent BR3 3JL. ■

PUBLIC DOMAIN TOP TEN

What are the best selling PD disks for your machine? What are people buying and why? Well now you can find out! Every now and again, we'll be bringing you the top ten pieces of PD software as compiled by a leading public domain library. This week's chart is for those ST users out there, and comes from Paradise PDL.

1	WP 02	*ST Writer Elite*
2	Dem 56	*Life's a Bitch* (double sided)
3	Graf 01	*Neochrome*
4	Dem 39	*Star Wars Demo* (double sided)
5	Dem 57	*Batman the Movie* (3 ds disks, not STE)
6	Util 60	*Fast Copy*
7	Edu 4/5/6	*History File* (3 Disks)
8	Util 61	*Uniterm*
9	Bud 40	*Dizzy Lizzy*
10	Util 38	*Pools Predictor*

Unless otherwise stated all disks are STE compatible and run on a single sided drive, 1/2 meg machine.

If you run a PD library, and would like to see your top selling software in the charts, simply send us one next time you send any software.

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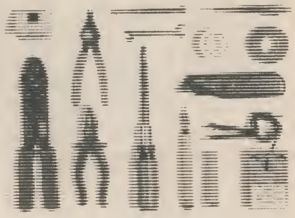

At the recent All Formats Show, Arch welder Michael Stirling threatened to show us how to get hi-fi sound from an A3000. We told him to put his soldering iron where his mouth was and he produced this project.

This hardware modification to the Acorn A3000 will alter its audio output from being a good imitation of a medium wave radio to near hi-fi, and will easily put the Amiga's sound to shame.

The operation consists of removing the low-pass filter from the audio circuit, allowing the full high frequency range to be reproduced. It is important that you read the notes at the end before attempting to carry it out.

BASIC CIRCUIT OPERATION

The VIDC outputs sound as two pairs (left and right channels) of differential outputs. Considering just one channel, the other which is the same, these outputs feed into a differential amplifier (LM324).

The non-differential output of the LM324 is put through a passive T-filter and then fed to an active filter, which together almost eliminate high frequencies, making it sound medium-waveish. The active filter is physically the same chip, as the LM324 contains four op-amps.

The resulting muffle is then output straight to the headphone socket and an LM386 amplifier (one per channel) which drives the speaker. The LM386 is switched on or off by the *SPEAKER command.

This mod skips all the filtering, connecting the headphone socket and the LM386 straight to the non-differential output of the LM324.

I am sorry that I cannot supply a circuit diagram, but copyright laws prevent me from reproducing it. However, if you are interested, consult the A3000 Technical Reference Manual which contains these details.

BITS AND PIECES

- Earth strap (Recommended)
- Small Philips screwdriver
- Larger Philips screwdriver
- Light gauge wire (approx 7 inches)
- Wire cutters (or strippers, preferably)
- Soldering iron
- Some soldering ability
- Patience
- This issue of *Express* (you won't stop buying it after this will you !)

ON WITH THE SHOW

1) Unplug the computer and make sure that there is nothing plugged in or live within the grasp of your working area. As you are going to work with an anti-static earth strap on you must be aware that this will ground you and any contact you have with high voltage and high current will be potentially lethal. Don't become a statistic.

2) Open up the case. This is done by loosening the two screws at the back of the computer so that the fasteners drop out, and undoing the one on the bottom, above the warning label.

3) Lift up the back of the case slightly until the two rear tabs are free. (Gently push them in to make them slide out). Now, starting carefully from the rightmost tab, disengage the front three tabs by gently pulling the front of the top half forward with the fingernail of your thumb (or if your fingernail can't take it, a screwdriver, but it will leave dents) until one by one, they are disengaged. This is tricky and requires a little controlled force. Be careful that the keyboard does not fall out and damage its connector.

4) Put on an earth strap, to guard against static damage.

5) Before proceeding any further, check that the main board is either issue A or issue 1, as I do not know whether this modification will be applicable to later boards.The issue number is written on the board, underneath the drive, near the top right edge. See 'For Techies' for help on different boards.

6) Disconnect the power and data leads from the disk drive, then remove the drive by unscrewing the four screws holding it from beneath. Be careful that it does not fall as the last screw is removed and also that the keyboard does not pull on its connections.

7) Find Capacitors C65 and C70 which are located a little way back from the RGB connector, as is the 14 pin LM324. Desolder their positive terminals so that the leads are hanging free.

8) Strip two pieces of wire about 3 inches long and tin them. Make the stripped ends about 3mm long.

9) Now solder the connections as follows: LM324 pin 1 to C65 positive (free-hanging) lead. (Left ch) LM324 pin 8 to C70 positive (free-hanging) lead. (Right ch).

Note: Pin 1 is to the left of the notch at one end of the chip. Pin 8 is found by counting anti-clockwise from pin 1 and is the one at the opposite corner. Take care not to short any of the pin with wire or solder. Wrap a small piece of tape around the capacitor connections to prevent inadvertent shorts.

10) Test the computer. Reconnect the drive and put it in place, but do not screw it down yet. Just ensure that the metal case does not short out on the PCB or RAM board that may be fitted. Switch on. If it does not power up, switch off IMMEDIATELY and check your soldering for wrong connections, shorts etc. Also check the power connections to the left of the board, in case they are loose.

11) Ensure sound is configured to ON, with "*Configure Sound Default 1 7 1" and press CTRL+BREAK. Load a SoundTracker tune. If you do not have any, you may easily obtain some from any PD library or BBS. Alternatively, play a game which contains music.

12) Listen to the sound, it should be noticeably brighter and clearer, even through the internal speakers. If one channel is dead, check the soldered connections for that channel. In particular, that it is the positive end of the capacitor which has been disconnected from the board.

13) If all is well, screw down the disk drive and cover in the reverse sequence to the removal procedure. Ensure the keyboard and its connector are seated properly.

JOB DONE!

Now that you have successfully completed this bit of hardware surgery, the improvement in sound quality will be dramatic, especially through a decent hi-fi or headphones. The sound will be sharp and clear, with some aliasing audible at times.

This modification could be performed on all Archimedes, from the earliest A305 to the latest A540, as the audio circuits are almost identical. However, as I do not have the circuit diagrams, I cannot specify precisely where to make the connections.Get the relevant technical manuals and only attempt the job if you know what you're doing.

FOR TECHIES

The following is for techies and wireheads who have some electronics experience!

To help you perform this modification on a different version of the Arc, start by locating IC LM324 which should be fairly close to the audio connector. The hard part is then finding which are the right capacitors, but with a little perseverence it is possible.

The capacitors you are looking for will probably be small (11mm by 6mm approx) light blue ones rated at 100uF/25V, as in my A3000. When the capacitors are located, make the connections as described above. Remember: desolder the positive ends.

It would be quite easy to fit a switch to toggle between filtered and unfiltered output, if you really must have the filter.

A buffer amplifier may be put in to improve drive but will degrade sound quality a little and will require extra techie knowledge! ■

WARNING

- **If you mess with mains electricity you could end up dead sooner than you'd planned.**
- **Any meddling with the insides of your machine will annoy Acorn and invalidate your guarantee.**
- **This mod should only be done by somebody competent at this kind of work.**
- **To prevent static damage to the main board, use of an earth strap is strongly recommended.**
- **This modification reduces the headphone drive capability, so some distortion may occasionally be heard through low-ish impedance headphones at times (mainly on bass), but not through the internal speakers or an amplifier.**
- **This modification was carried out on my older issue A board, but should be the same for issue 1's.**
- **The A3000 Technical Reference Manual was used when performing this modification and should be consulted if you are interested in doing your own mods. It is available through any good Acorn dealer.**
- **Please send in any modifications which you devise, they would be very welcome. You would also become quite famous. . . .**
- **Finally, if you break your expensive computer by messing around with things you don't understand, it's your fault not ours. we won't be held responsible for any amateur fettlers cock ups.**

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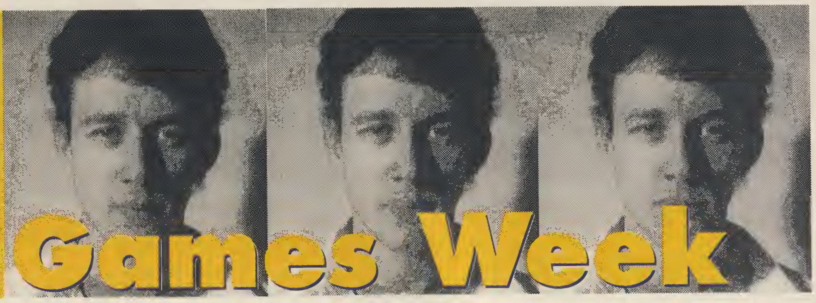
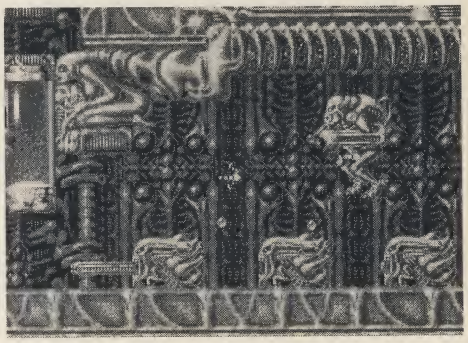
MARK HIGHAM'S Games Week





• **Z-Out:** *in need of some work on the ST version.*

CHRISTMAS DELAYS

Over the last few weeks I've been waffling on about some damned hot releases from Rainbow Arts – *Z-Out, Turrican 2* and *Masterblazer*. In a shock announcement last week, Rainbow Arts admitted that it's considerably further behind than expected on all ST versions of its games. *Masterblazer,* previously the first of the promised titles, is now going to miss Christmas and may not make it out until as late as February. *Z-Out* is in exactly the same state.

One of the biggest surprises is the annoying delays with *Powermonger,* the next game from hit programmers Bullfrog which has been promised every month since autumn. Problems with the Amiga version have delayed work on other formats. The Amiga version is still two weeks away from release (isn't it always?) and the ST version is considerably further behind than that.

Turrican 2 is the only one which looks even close to being finished but Rainbow Arts is determined to stick to its February release date. Part of the hold-up is down to the fact that Rainbow Arts has only one sound man who has to write the sound for each game individually.

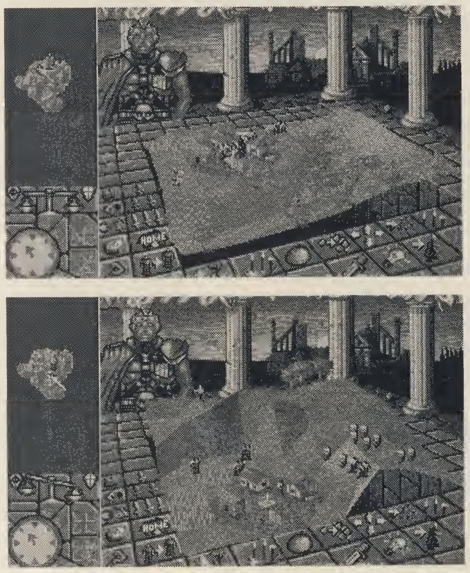
I've played ST and Amiga demos of *Z-Out* and I prescribe an immediate re-write of the ST game. Giant aliens, some impressive visual effects and fast gameplay make the Amiga version a dream of a shoot-'em-up to play. By comparison, the ST version has tiny sprites, unimpressive aliens and slow scrolling.

But Rainbow Arts isn't the only games publisher to suffer in the run up to Christmas. As you'd expect there are handfuls of games promised for the Christmas season which will never make it in time. For example, *MidWinter 2: Flames of Freedom* was intended for a pre-Christmas release but is now unlikely to appear much before March. 16-bit versions of *Robocop 2* may turn out to be late and it's going to be a miracle if we see signs of Domark's *STUN Runner* and *Hard Drivin' 2* before you slice the turkey.

Electronic Arts is insisting that ST *Powermonger* will hit the shelves just a few days before Xmas but that now seems unlikely.

INCREDIBLE ANIMATION

Just enough time to mention *Prince of Persia*, coming soon from Domark. Very early demos of the game were on show at September's CES show. The game puts you in control of a small hero who must be directed around a maze of corridors inside a castle. What gives the game big appeal is the incredible animation involved in the gameplay. So many frames of have been used that the central character walks more realistically than any other game character I've seen. When it comes to leaping over divides or using his trusty sword, you could almost be forgiven for thinking you were watching a Disney movie. At this stage it's impossible to tell how well the unique animation and gameplay will be integrated but the signs look promising. Keep an eye out for *Prince of Persia* – you'll be hearing a lot about it in the New Year. ■



• *Win friends and kill people in* Powermonger *(it's crucial!)*

THE 16-BIT TOP TEN

For the week ending 17th November

1	1	F-19 Stealth Fighter	MicroProse	ST AG PC
2	2	Lotus Turbo Challenge	Gremlin	ST AG
3	7	M1 Tank Platoon	MicroProse	ST AG PC
4	3	Kick Off 2	Anco	ST AG PC
5	NE	Hollywood Collection	Ocean	ST AG
6	5	Power Pack	Beau Jolly	ST AG PC
7	4	Supremacy	Virgin	ST AG
8	NE	Super Off-road	Virgin	ST AG
9	8	Captive	Mindscape	ST AG
10	11	Gremlins 2	Elite	ST AG

ST – ATARI ST AG – COMMODORE AMIGA PC – IBM PC OR COMPATIBLE
Chart compiled by Gallup. © European Leisure Software Publishers Association.

SUPREMACY

Virgin / Melbourne House • £29.99

OK, you've played *Sim City* to death and now you want to expand your power. Commanding a simple city is child's play, it's about time you had the chance to get to grips with the planet. Well, Supremacy gives you the opportunity not just to master your own planet but the rest of those in the Universe as well.

The objective of the game is to take on one of four opponents and beat him by taking over his home planet. At the start of *Supremacy* you have a single planet with no way of supporting life. The objective is to establish a colony on the planet, watch as the people develop and then begin to build yourself an army. As the game develops you move out to other planets, setting them up to support life and then sending troops out to protect the planet. All the time you're busily dominating the known Universe your enemy is doing the same thing. If you attempt to take over planets dominated by the enemy you first need to send in your troops to overpower the enemy forces. Depending on the bad guy you choose to fight at the beginning of the game you may need more troops to overpower some planets than others.

The plot makes *Supremacy* sound like a complex strategy game but it's remarkably easy to handle. All the action is accessed by clicking on icons on the front screen. Also on this screen are the planets in the Solar System. Red planets indicate those adopted by the enemy while green ones are those in your power. The main enemy base is at the top of this star map with your own base located at the bottom. As the planets change colour in between you see how the enemy is drawing closer.

To establish life on a planet you need to click on the buy icon and then invest in a horticultural station to provide food for your people, a mining station so they can produce fuel and minerals, and a solar satellite to provide your stations with energy. The stations then need to be installed on the planet surface while the solar satellite must be launched into orbit. When it is time to move to other planets, you equip your stations with fuel, crew them and then click on the orbit icon to send the stations into orbit and then off to the planet of your choice.

As your power expands through the Universe you can also buy yourself personnel carriers to transport people and goods around the planets or battle cruisers to carry your army off to a battle site.

For the first part of the game you're going to concentrate primarily on establishing a healthy community of people. The more people you can encourage to live on your planets, the more tax revenue you can make to be able to buy new equipment. However, once you have enough cash at hand, it's time to turn your attention to training your troops. This involves taking them out of civilian ranks and waiting for them to develop. When they are 100 per cent trained you equip them with a choice of armour and weaponry. In times of battle you put them into a battle cruiser and send them to the required planet, putting them on maximum aggression levels ready to do battle with the enemy.

There are heaps of impressive visual effects livening up the action as well as sampled speech and tunes but this type of game lives or dies by its strategy element and Supremacy has much to shout about in that department. Each game starts off moving quite slowly but as you take over more and more planets you have much more to watch out for. For example, populations may expand and demand more food than a single horticultural station can provide or an energy storm can knock out your satellites or you need to watch out for the threat of invasion. All of these considerations and more keep you rivetted to the edge of your seat throughout. It may take you an hour or two to understand the way the game works but it's time well spent. You won't regret getting your teeth into *Supremacy.*

CASTLE MASTER

DOMARK / INCENTIVE

PLAYING TIPS: Mastering Castle Master

This week I'm giving you tortured *Castle Master* fans some help on how to get through the first half of the game, courtesy of an anonymous *ST Format* reader. If you want to get your own name in print then why not drop me a line with any game solutions or tips you have. Send them to Mark Higham, Games Week, 30 Monmouth Street, Bath. BA1 4BW.

- Before we get into the real meat of the solution, here are a couple of handy tips to see you on your way:
- At any time when energy is low visit the kitchen/larder, the cellar on the inn for supplies. But don't drink more than three gulps at a time or else your energy will go back down.
- Always save the game at appropriate places (ie. before shooting spirits, going into rooms etc), so that you do not have to repeat things.

And now for the solution (well a tiny part of it at least)

Go to the front of the castle. Throw brick at drawbridge hole. Get on drawbridge and look up at the hole to the side. Throw another rock at the hole. You should now be flicked onto the church roof. Look down and get the key. Drop down the hole in front of you into the church.

Collect the cheese from the other side of the altar. Now turn round and walk to the cross. Face the cross and walk towards it until you hit the wall straight ahead. Turn right and walk to the door. Enter the bell tower and ring the bell (action on the grey thing). Look down and action on the pentacle (purple thing). Exit the bell tower then back into the church. Walk to the corner of the room where the brown piece of furniture is located. Crawl into the hole. Shoot the spirit (tossing a rock at it several times). Get the pentacle in the cavern and climb up the steps to exit through the door.

Turn right at the opening and enter through the door, turning left. Turn right and walk through a door which looks like a chapel door – it isn't square or hexagon shaped. When in the cellar corridor walk to a small hole on the far wall and follow these instructions:-

1. Action on small hole
2. Get treasure

Repeat six times.

Now walk through the first door on the right. Quickly head for the end of the room. Turn right and wait for the spirit mouse to appear from the hole. Kill the spirit ad exit from the room.

Go to the next door on the right and kill spirit by using the iron maiden. Turn around and exit. Now turn right and go through the next door along. Kill the spirit by using the left barrel. Action on the first bottle on your left. (The one on the second shelf). Only three times. Now exit from the room and go through the door straight ahead. Walk through the door (with green around it) and go up the stairs and through the door. Go behind the second case of stairs and turn around so you're facing the back of the stairs. Crawl up to the second step up. Get the treasure and then head up the second staircase. Action on the lock and enter the door. Turn left and take the food then turn left again. Open the door on your left and enter.

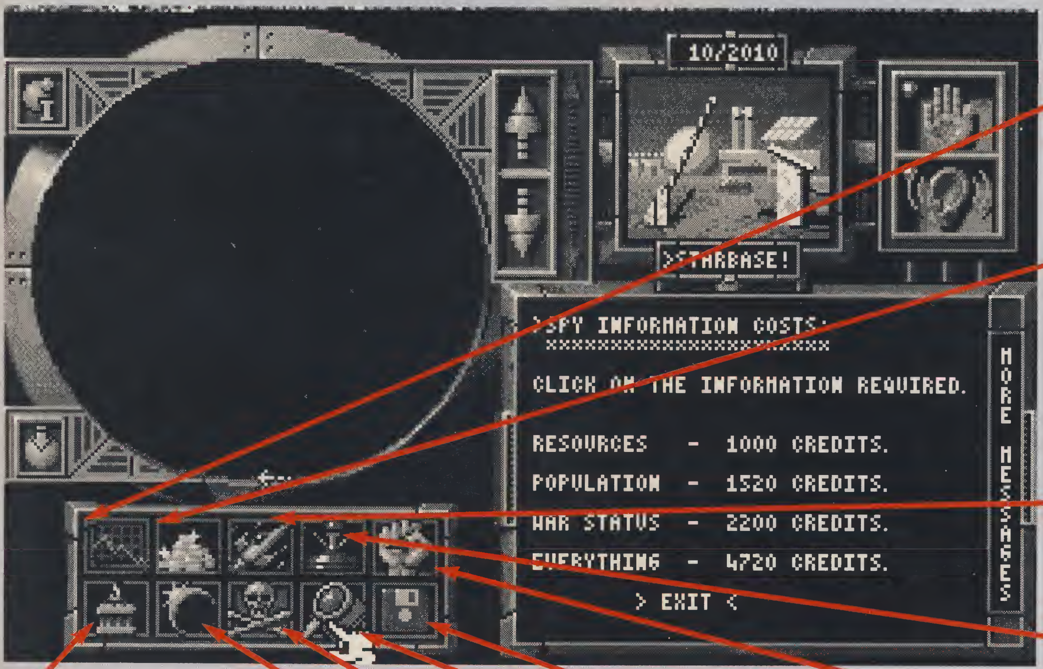
Kill the spirit and take the key on the right wall. Exit back through the door. Go back to the cellar door and continue until there are two green buttons and a wall. Press button one and then two. Crawl under the wall, now raised. Shoot the lock (the grey thing) off the door. Now enter the door and look through the bars at bright treasure. Exit and head through the door straight ahead.

Now go through the door on your left and proceed forwards until you reach the door on the right. Go through this door and eat the food on the shelf (mind fire!). Exit and advance forwards until the building has passed. Now turn right and go forward until you reach the front of the building. Turn right and head through the first door on your right. Open the door in the wall (action on it).

Crawl under the horse and action on the black hole (thus getting key). Now get the cheese on way out. Turn right and go through the next door into the haystack room. Turn right and go to wall. Turn right again and get key from behind the hay bail.

Now exit!

VIEW FINDING YOUR WAY IN SUPREMACY



10/2010

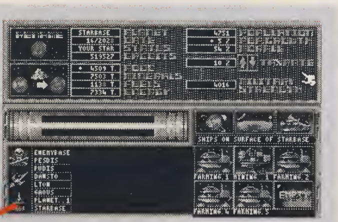
>STARBASE!

```
>SPY INFORMATION COSTS:
 xxxxxxxxxxxxxxxxxxxxxxxxxxx

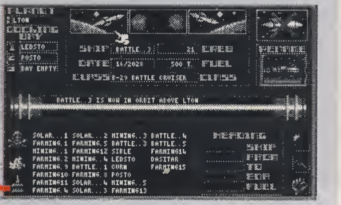
CLICK ON THE INFORMATION REQUIRED.

RESOURCES    -  1000 CREDITS.
POPULATION   -  1520 CREDITS.
WAR STATUS   -  2200 CREDITS.
EVERYTHING   -  4720 CREDITS.

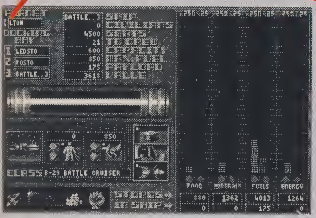
          > EXIT <
```



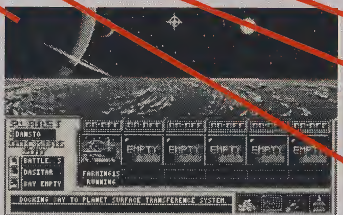
- *The Government Screen is where you go to change taxes and examine the state of your planet. The buying screen enables you to purchase new stations, battle cruisers and solar satellites.*
- *The buying icon cycles through the available craft. Make sure you've got enough*



- *Send mining stations or other goods out into space. Using this icon you can also put troops and civilians into space.*
- *Move your atmosphere processor to other planets so that you can format and then inhabit them*

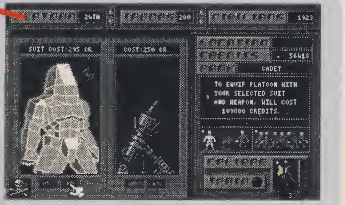


- *This icon enables you to crew and fuel your ships.*



- *Go here to install mining stations or horticulture stations on the planet.*

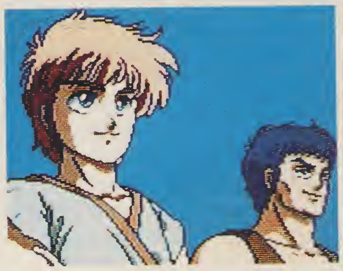
- *Load or save your game position*
- *Send out spies to obtain information about the enemy. This information costs money*
- *Transfer your troops onto a battle-cruiser ready for action*



- *This is where you come to train your armies and equip them with weapons.*

THE CONSOLE ZONE

This week Richard Frederick previews Double Dragon Three, Ms Pacman and Junctions and hands out playing tips galore.



• **Wanderers From YS III:** ***Sequalitis continues.***

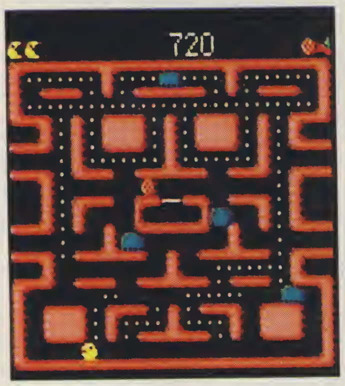
NEC PC ENGINE

Sequels seem to be popular in Japan at the moment, so Hudson Soft and Falcom have released *Wanderers From Ys III*.

A typical Japanese epic, this role-playing adventure pits good against evil for 7200 yen (£28).

ATARI LYNX

The *Pacman* craze seems to be sweeping through the console circuit in a big way at the moment. This cute little fellow has recently made an appearance on the Gameboy and Famicom, and now *Ms Pacman* is munching her way around the Lynx. The game costs 4300 yen (£17).



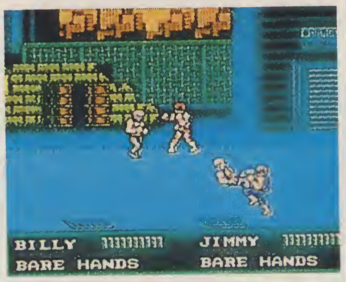
• **Ms Pacman:** ***Munch mania arrives on the Lynx.***

THIRD DRAGON FOR NINTENDO

Technos' new release is not so much a case of *Double Dragon* as *Triple Dragon*. The company has now released a third title in its series of highly successful beat-'em-up games.

With *Double Dragon III - The Rosetta Stone* you and a friend have the choice of playing Billy Lee and his brother Jimmy, who specialise in bare fist fighting and nunchuks, Chin Seimei, who can handle the iron claw, or Yagyu Ranzou, who is armed with a ninja blade and shuriken.

This one- or simultaneous two-player scrolling martial arts adventure costs 6200 yen (£24).



• **Double Dragon III:** ***You can't keep a good dragon down.***

NINTENDO GAMEBOY

Mercenary Force is set over one hundred years ago during the mighty shogun era. Using his powerful magic, the Lord of Darkness has spread famine, plague and pestilence throughout the peaceful population. You must recruit a lethal mercenary force from a band of deadly warriors to free the land from the Dark Lord's ruthless reign of terror.

Meldac's new action shooting game has been voted one of the best game introductions by Japan's Gameboy Club Magazine

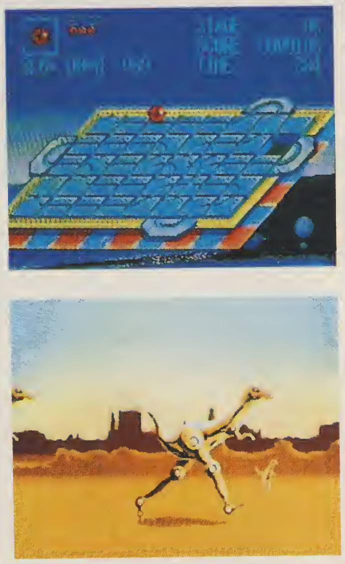
ATARI 7800

Ikari Warriors is a coin-op conversion of the vertically-scrolling Rambo-inspired shoot-'em-up. You're on a mission to rescue the colonel from an impenetrable fortress deep inside enemy lines. A one- or two-player game, *Ikari Warriors* is one in a new range of games for the Atari 7800 - there's life in the old dog yet!

SEGA MEGADRIVE

Junctions is an arcade puzzle game from Micronet where you manoeuvre a ball around a grid by manipulating its track. The ball must pass designated points on the grid while avoiding nasty enemies.

If the ball goes over a special booster this will change the ball's speed, alter the time limit or put your enemies on hold. Konami has licensed the game in Japan.



• **Junctions:** ***Two shots of the latest arcade puzzle game from Konami in Japan.***

PLAYING TIPS

Run the *Gauntlet* with these passcodes:
HPE-Z9H-ZOI
HPE-Z9H-ZIZ
HPE-Z9H-ZZI
HPE-Z9H-ZZZ

Fly these *Blue Lightening* passcodes:
Mission One: AAAA
Mission Two: PLAN
Mission Three: ALFA
Mission Four: BELL
Mission Five: NINE
Mission Six: LOCK
Mission Seven: HAND
Mission Eight: FLEA
Mission Nine: LIFE

Get extra *Crater Maze* men by killing 64 enemies or creating 64 tombstones.

Start *Golden Axe* with 15 lives, select a two player game and kill the other character as soon as the game begins. You will then have three men plus four credits.

Find the bonus round in *Nemesis* by shooting the top 'coda' at the end of level two. Fly through the gap it leaves and you're in the bonus round.

SEGA MASTER SYSTEM
Select any *Enduro Racer* level by pressing [Up], [Down], [Left] and [Right] on the title screen.

THE READER ZONE

We're looking for the best video game players in the country. Send us your top scores on the latest games released on the Megadrive, Gameboy, NES, GameGear, Sega Master, PC Engine, Lynx and Neo-Geo.

Have you found any hidden features in your new games? What do you want from the next generation of console hardware and software? We're also after your tasty tips, crafty cheats and hot hints

We want your views on any subject connected with console gaming. Write without delay to:

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THE TOP CONSOLE SCORES – CAN YOU DO ANY BETTER?

GAMEBOY		
Batman	424,060	Peter Worth
Super Mario Land	474,170	Jay Lee
Tetris	396,064	Peter Worth
LYNX		
California Games (BMX)	798	Nicholas Wells
California Games (Footbag)	100,743	Nicholas Wells
California Games (Halfpipe)	32,025	Nicholas Wells
California Games(Surfin')	8,100	Nicholas Wel

MEGADRIVE		
Eswat	277,900	Alex Taylor
Forgotten Worlds	1,843,000	Wai-Yin Man
Ghouls and Ghosts	750,000	Tim Walker
Golden Axe	414.5	Alex Taylor
Moonwalker	1,020,360	Nicholas Wells
Rainbow Islands	1,760,980	Nicholas Wells
Super Shinobi	5,890,200	Wai-Yin Man
Thunderforce III	3,564,100	Nicholas Wells

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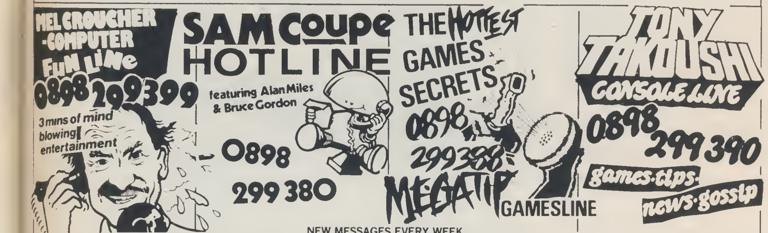
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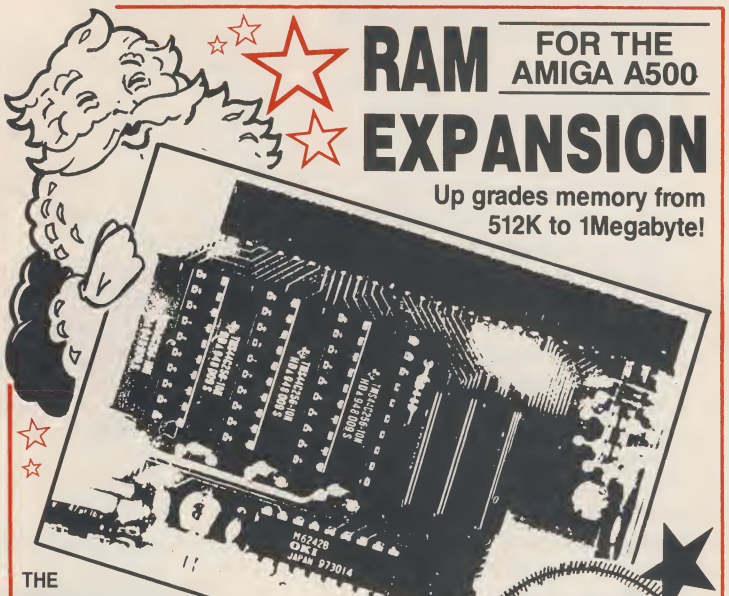

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ALL YOU CO
WANT FOR C

More computers will be bought in the next couple of weeks than at any other time of year. Last week we looked at the best buys for the dedicated gamer; this week we analyse the machines for more general use.

Why do you want a computer? It's a vital question to ask yourself before you even begin to choose a machine; you must have a clear idea what you want to achieve with your prospective purchase. The possible uses broadly break down into the following categories:

- **Games:** By far the most popular use of home computers, gamers favour colourful computers with stereo sound and an extra turn of speed to get that arcade feel. Also important to gamers is the selection of games available and their price.
- **Education:** Many parents buy computers to help with their children's schooling. The most important issues are compatibility with the school's system and availability of suitable software.
- **Home business:** Word processors help you write letters, spreadsheets can keep track of your finances and databases can store your data tidily. Good reliable software is essential for this area, and there are hardware considerations such as having enough storage space for the data.
- **Hobbyist:** Many people use their machines for things which can only be done on computer; computer graphics, sound sampling, MIDI music and so on.
- **Programming:** A lot people just like to dabble and play with their machines. Every machine offers something to the enthusiast, but some are better equipped with peripherals and computer languages.

The chances are you will want a computer which can handle most if not all of these areas. In our guide we will analyse each machine in each of these five categories and draw conclusions about the machine's suitability. If you are new to computing, you'll find our guide to the jargon on page 76 handy for reference.

ACORN ARCHIMEDES BBC A3000

Price: £749

Hardware: The Archimedes is the most technically advanced of the home machines, featuring a blindingly fast chip at its core. It also has the most memory as standard of any machine.

Games: Archimedes games are extremely thin on the ground and of dubious quality. No one has ever bought an Archie for playing games.

Education: Top notch. The Archie is the most common computer in schools and offers compatibility with that other stalwart the BBC Master. There is plenty of software, and it's the real McCoy used by teachers. Look out for the Learning Curve pack, which is geared to education.

Home business: There is a growing amount of software available in this area. There are competent but unspectacular DTP, spreadsheet and word processing packages. They are very prettily presented with the Archie's simple-to-use mouse-based system.

Hobbyist: The Archimedes is well set up for all types of graphics and sound handling with its super-fast microprocessor.

Programming: The Arc is a programmer's dream. It offers hardware of a standard not normally affordable by mere mortals and some excellent programming languages (including the schools' standard, BASIC V)

Other models: More up-market Archimedes are available with specifications approaching and exceeding those used for computer aided design workstations. They run the same software as the A3000.

Conclusion: The Archimedes is a relatively new machine, so the amount of software available for it is still limited compared to some of the others. It is, however, a technically excellent computer and can be unhesitatingly recommended for educational and hobbyist use.

AMSTRAD CPC

Price: 464 Plus Mono £230

Hardware: The CPC range has been recently updated with a new look for the Nineties and improved hardware. The range comes with either a cassette (464) or disk drive (6128) and a choice of colour or black and white monitor.

Games: Excellent. There is a very good selection of cassette and disk games available ranging from as little as £1.99. Another plus is that all the major games companies write for the CPC. A new feature is a cartridge slot which allows the CPC use console games from the GX4000.

Education: Limited software and usefulness.

Home business: Well equipped for an 8-bit machine. The CPC has some serviceable word processors, but if this is your main reason for buying a machine look elsewhere.

Hobbyist: Excellent. There are plenty of cheap bits and pieces to stick on the back, and the CPC is at the heart of many projects.

Programming: Fair. The included BASIC language is a reasonable introduction to the subject.

Other models: 464 Colour (£330), 6128 Mono (£330), 6128 colour (£430)

Conclusion: The CPC is an excellent games machine with the potential to be more versatile. It comes with a monitor, which is a huge advantage, and the games are cheap. Recommended.

AMSTRAD PCW9512

Price: £499

Hardware: The PCW comes with a built-in monitor and disk drive and a daisywheel printer as standard. Electronically it is very low tech, but it works!

Games: Almost none.

Education: Some schools use PCWs as they are a cheap way of teaching word processing. They are not recommended for this though, as the software available is very limited

Home business: Excellent. The PCW comes with a word processor and matching spreadsheets and databases are cheap and efficient. You should be aware, though, that it is not the easiest machine for the novice to use.

Hobbyist: Little attraction

COULD EVER CHRISTMAS

Hobbyist: Little attraction

Programming: Ditto.

Other models: The cheaper 8256 and 8512 have a green screen and a dot-matrix printer.

Conclusion: If you want a machine purely for word processing and keeping a few records on a database, the PCW is a very cost effective solution.

APPLE MACINTOSH

Price: from £660

Hardware: The Macintosh is unique. It has a distinctive styling all of its own and it pioneered the use of a mouse driven computer. It is generally reckoned to be the easiest computer to use. Beware though, you will need a hard disk.

Games: Expensive and rare, but extremely sophisticated. The top simulators and strategy games are on the Mac.

Education: The Mac is increasingly used in schools as it is so easy to use that kids can be taught using real computer programs, not simplified ones.

Home business: Superb. The best word processors are Mac programs.

Hobbyist: The Mac features the best graphics software available, and it is a standard machine in recording studios.

Programming: Excellent. It comes with a free copy of HyperCard, a system which lets you program in a language called HyperTalk which approximates to plain English. More powerful languages are also available, although you have to deal with the Mac's mouse and menus system.

Other models: With a hard disk a Classic costs £995. The colour LC starts at £1,300. Mac IIs cost over £2,500 but are worth dreaming about.

Conclusion: If you want a computer to use as a productivity tool, you really can't beat the Mac. You need a hard disk to use it though.

SINCLAIR SPECTRUM

Price: £149

Hardware: The cheapest computer you can buy and its not surprising when you see what it can do. The sound and graphics are quite dreadful. It comes with a built-in cassette deck.

Games: Plenty of them and they're cheap, but the lousy graphics mean that good games are few and far between.

Education: Some software is available as the Spectrum is one of the biggest selling computers.

Home business: Forget it.

Hobbyist: The dedicated tinkerer can have a lot of fun with a Spectrum, but it's hard work.

Programming: You can choose BASIC, BASIC or BASIC

Other models: None since Amstrad dropped the disk-based Plus 3.

Conclusion: The Spectrum is a machine showing its age. However it remains the cheapest computer you can buy and the games are so inexpensive they are almost giving them away.

ATARI ST

Price: from £299

Hardware: the ST is the cheapest 16-bit computer. It comes with a built in disk drive and 512K of memory. Its graphics are reasonable but unspectacular and its sound is poor. For music lovers it has built-in MIDI sockets which allow you to connect a synthesiser.

Games: The ST has an excellent range of great games. Unfortunately they are expensive at around £25 a time.

Education: The ST uses a mouse to control it so it is simple to use for beginners. There is an increasing amount of educational software on offer.

Home business: Good. The ST has a good range of databases, word processors and spreadsheets which, while lacking the solid feel of the Mac and PC versions, are competent and very reasonably priced.

Hobbyist: Excellent. The MIDI ports make the ST a musician-on-a-budget's dream machine. There is plenty of graphics software and sound samplers galore.

Programming: Good. The games programming system STOS is widely recognised as the best of its kind, and there is a good selection of programming languages, many of them free public domain affairs.

Other models: The STE has enhanced graphics and sound and costs an extra £100 (with an excellent bundle of games thrown in). The 1040 has a megabyte of memory, and the Mega series is geared more at the professional. There is a portable version, the Stacy.

Conclusion: The ST is an excellent general purpose computer. It doesn't really excel in any one area, but it is a good all-rounder and it has a highly competitive price.

LAPTOPS

Price: From £200

Hardware: There are a number of hand-held computers which allow you to compute on the move without having to lug a huge machine around, including the Cambridge Z88, the Tandy WP2 and the Atari Portfolio.

Games: None

Education: No use

Home business: Although some offer more than word processing, text entry is the main use of these machines

Hobbyist: Carry a computer wherever you go.

Programming: Limited

Other models: Several manufacturers make hand-held computers, their exact specifications vary.

Conclusion: If you want to be able to write while on the move, consider a hand-held. It is unlikely to be suitable to be your only machine.

COMMODORE AMIGA 500

Price: £399

Hardware: The Amiga is a sophisticated 16-bit computer featuring excellent colour graphics and stereo sound. It comes with a disk drive and 512K of memory. The Amiga has a set of specially designed microchips which make it considerably more powerful than its rivals in the graphics and sound departments.

Games: The best. Amiga games are the envy of all other computers; unfortunately you need deep pockets as a £30 price tag is not unusual. Increasingly games are being produced which will only run on an Amiga.

Education: Some schools use Amigas, and the machine is developing a base of educational software. The Class of the '90s package includes some of this with the computer.

Home business: Good. There is a lot of productivity software around, although most of it is American.

Hobbyist: Good. There is excellent computer graphics, animation and music software available.

Programming: Popular with programmers, the Amiga can run more than one program at once which can give it the edge when writing code.

Other models: The Amiga 1500 is a £1,200 package aimed at home business with a monitor and a different main unit. The Amiga 2000, 3000 and 3500 are high end graphics workstations with price tags to match.

Conclusion: The Amiga is not a cheap option, but it is the best leisure computer around. It is perfectly possible to use the Amiga for more serious purposes, but be prepared to spend out on more memory and another disk drive.

COMMODORE C64

Price: £159

Hardware: An ageing machine, the C64 is pretty basic when it comes to hardware. A separate cassette deck is sold with the machine and you can get a disk drive as an add-on.

Games: The games are not spectacular in terms of pretty graphics and snazzy sound, but they are very playable and very cheap.

Education: Limited. There is some software, but not much.

Home business: In America the C64 is seen as a multi-purpose machine, but over here things are much more games oriented. Word processing is perfectly possible, but you'll need a special printer and a disk drive.

Hobbyist: Great. The C64 has been around so long that people have learned how to take advantage of every facet of the machine.

Programming: Poor. You are limited to BASIC.

Other models: The GS games console runs the same cartridge games.

Conclusion: If gaming is your thing and you're short of cash, look no further. Otherwise try a more versatile machine.

PC-COMPATIBLES

Price: From £399

Hardware: PC compatibles (machines which run the same software as an IBM Personal Computer (PC)) can be customised to almost any hardware specification so it is difficult to generalise. A useable PC must have two disk drives, 640K of memory and a monitor. A hard disk is recommended.

Games: Picking up. PCs with EGA or VGA graphics can now play games of the same standard as those on the ST. Most software is American in origin.

Education: Good. PC compatibles produced by Research Machines are common in schools and there is a great deal of software. The PC is, however, not at all easy to use.

Home business: Excellent. There is a piece of software or hardware available to do almost any job you require, and much of it is available for little or nothing.

Hobbyist: Excellent; the PC is designed to be pulled apart and rebuilt and there is software for graphics, animation, music – anything in fact.

Programming: The best. There isn't a computer language which you can't get for the PC, and you can even develop ST and Amiga code on one!

Other models: There are hundreds of models of PC compatible. Look for EGA or VGA graphics, and as much memory as you can afford.

Conclusion: For 'serious' software, the PC is the cost-effective choice. Increasingly it is a good games machine as well. Don't fall into the trap of buying an under-specified machine; make sure you get one which is capable of doing what you want. ■

THE VERDICT

The computer you eventually choose is a personal decision. There are nine common makes and hundreds of models to choose from. To help you with your buying decision, these are the machines we recommend :

GAMES: *Low budget*: Commodore C64. At £159 you can't lose, although the computer is beginning to show its age. *Rich bastard:* Commodore Amiga (£399). Simply the best in this department.

EDUCATION: *Low budget:* Atari STFM (£299). There's a fair bit of software about - check out the Fun School series. *Rich bastard:* Acorn Archimedes (£749). This is the real thing when it comes to education.

HOME BUSINESS: *Low budget:* PC compatible (from £399). Plenty of cheap and powerful software on offer. *Rich bastard:* Macintosh Classic (£995). A pleasure to do business on this classy machine.

HOBBYIST: *Low budget:* Atari STFM (£299). The MIDI ports make this machine a winner for tinkerers. *Rich bastard:* Acorn Archimedes (£749). If you want to play around, don't mess about, get some real power.

PROGRAMMING: *Low budget:* Atari STFM (£299): Good choice of cheap (or free) programming languages. *Rich bastard:* PC compatible (from £399). Every language you've ever heard of, and then a few, are available for the PC.

ALL ROUNDER: *Low budget:* Amstrad CPC 464 Plus (£330). With the monitor included and plenty of cheap software, the CPC makes a great start in computing. *Rich bastard:* Commodore Amiga (£399). The Amiga can do anything, well, almost anything.

If you need advice go to a specialist home computer dealer which can tell you what you need to know and be able to demonstrate the machines to you.

JARGON BUSTERS

Computing is full of technical buzzwords. The following list may help you to understand some of the terminology often used.

16-BIT: Powerful second-generation computers with fast, sophisticated chips.
ANIMATION: Creation of moving images on the screen.
BASIC: The commonest and simplest computer language.
CARTRIDGE: A plug in unit containing a game.
CASSETTE: An ordinary audio cassette used for storing programs. Slow and unreliable.
CODE: The actual computer program.
DAISYWHEEL: High-quality printer with output like a typewriter.
DATABASES: Files of information stored on computer for easy access.
DISK DRIVE: Means of storing programs on small disk. Much faster than cassette.
DOT-MATRIX: Cheap but versatile printer which can print graphics.
DTP: Desktop publishing; creating whole documents on a computer.
EGA: Enhanced Graphics Adapter. A PC hardware device which allows it to use colour monitors. Essential for games.
GRAPHICS: Images drawn on the screen, also a general term for the sharpness and colours of the screen.
HARD DISK: Expensive but extremely fast disk drive which can store huge amounts of data.
HARDWARE: The electronic components of a computer.
LANGUAGES: The means of programming a computer.
MEGABYTE: A unit of memory (enough to store just over a million letters).
MEMORY: Storage space for programs and data within a computer. Measured in kilobytes (K), 1,024 of which make a megabyte (Mb).
MENUS: System which gives you a set of options rather than making you type in commands. Easier to use.
MICROPROCESSOR: The silicon chip which makes it all work.
MIDI: A system for connecting synthesisers to computers for recording and playback.
MONITOR: A screen which plugs directly into the computer instead of using a TV. Much sharper than a TV.
MOUSE: A device which lets you point at parts of the screen to give commands.
PERIPHERALS: Anything which plugs in to a computer; eg printers, disk drives.
SAMPLING: Recording sound electronically.
SOFTWARE: Programs which run on a computer.
SPREADSHEETS: Very sophisticated calculator which allows you to analyse a set of numbers.
VGA: Video Graphics Array: The sharpest and most colourful type of graphics for a PC compatible.
WORD PROCESSORS: Software which allows you to write letters and produce documents.
WORKSTATIONS: Expensive and powerful computers used in industry.

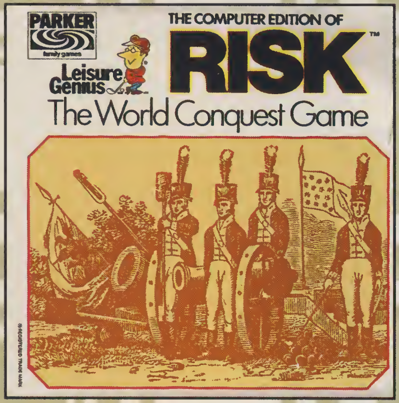
LEISURE GENIUS

Virgin
Leisure
Genius

THE NAME SPEAKS FOR ITSELF

Virgin
Leisure
Genius
SCRABBLE
De Luxe
SPEAR'S GAMES

SCRABBLE DE-LUXE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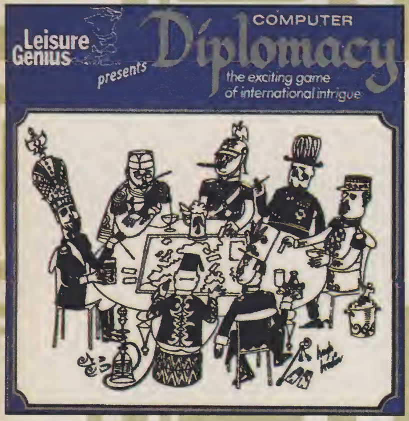
Leisure
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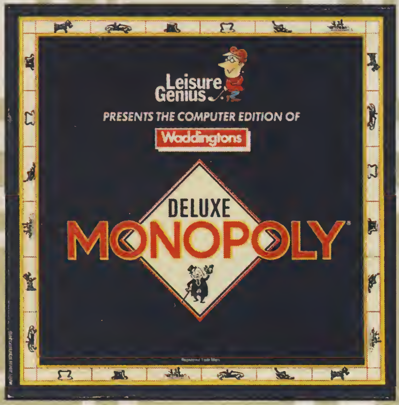
COMPUTER
Diplomacy
the exciting game
of international intrigue

DIPLOMACY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SCRABBLE, MONOPOLY, CLUEDO on
Spectrum, Amstrad and C64

*and: **CLUEDO***
on Spectrum, Amstrad and C64

	IBM PC	AMIGA	ATARI ST	CBM 64 DISK	CBM 64 CASS	SPEC +3	SPEC CASS	AMS DISK	AMS CASS
SCRABBLE DE-LUXE	●	●	●	●	●	●	●	●	
MONOPOLY DE-LUXE				●	●				
CLUEDO MASTER TEC	●	●	●						
DIPLOMACY	●								
RISK	●	●	●	●	●				

Virgin
GAMES

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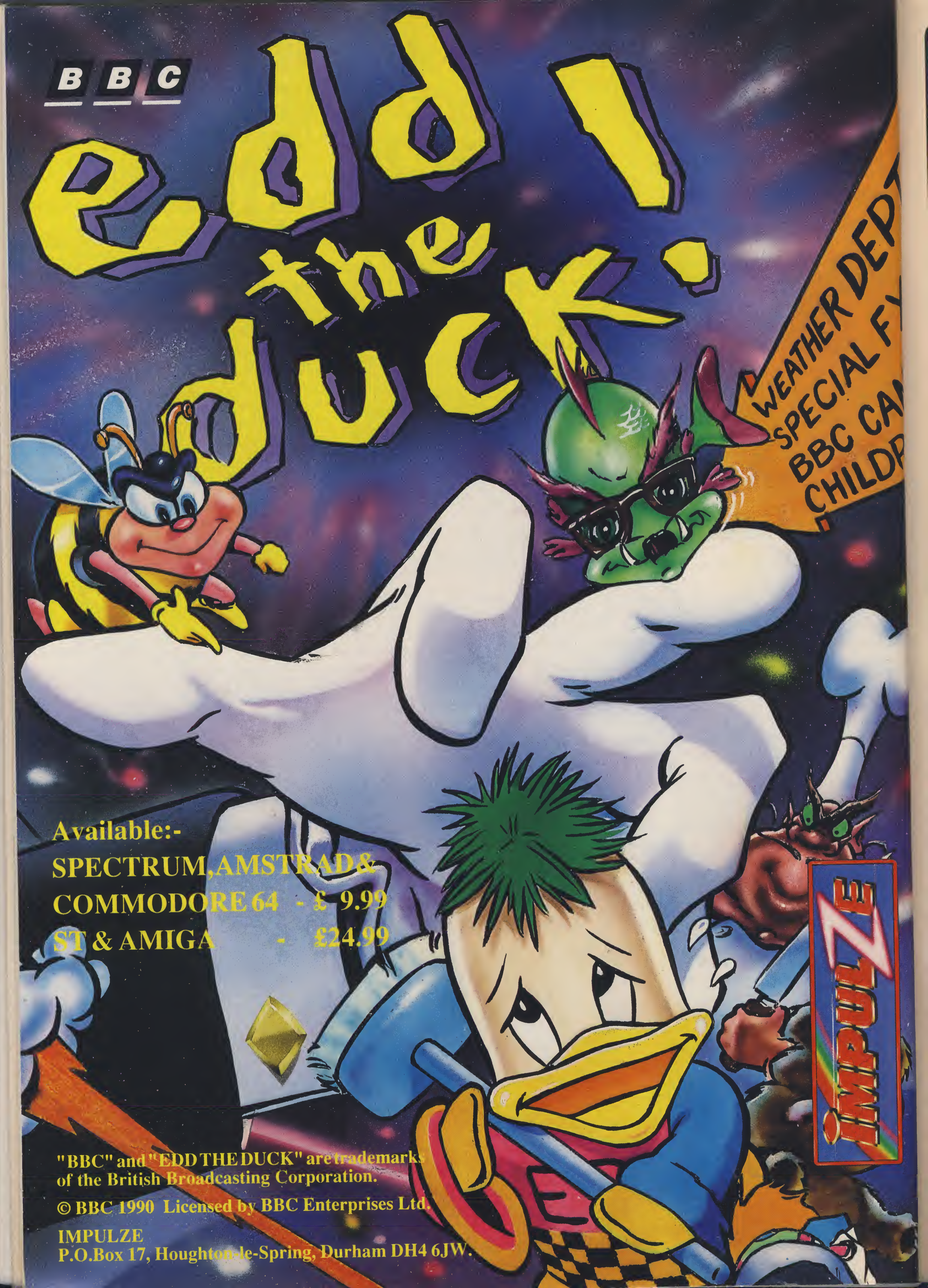
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★ POCKET SIZED ★ PC-COMPATIBLE ★ PERSONAL ORGANISER ★

ATARI Portfolio

THE PC IN YOUR POCKET

The new Portfolio from Atari is the world's first pocket-sized electronic organiser that is also a powerful PC compatible computer, with a full QWERTY keyboard and scrolling 80×25 character display.

Portfolio includes everything you would expect from an electronic organiser - an address and telephone book, time manager, diary and sophisticated calculator.

Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

FOR ONLY £199 INC VAT

SPECIFICATION

- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
- ★ ***Operating System:*** Compatible with MS-DOS 2.11.
- ★ ***Internal ROM:*** 256K containing BIOS, operating system and applications suite.
- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ ***Size:*** 8″ x 4″ x 1″ (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

5 BUILT-IN APPLICATIONS TO GET YOU ORGANISED!

To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

TIME MANAGER

More than just an electronic diary, the Portfolio Time Manager enables you to plan your appointments via a comprehensive calendar and diary. It can even be programmed to sound an audible alarm at specific times to remind you of important appointments.

CALCULATOR

Your Portfolio will be invaluable in the office or at home as a powerful pocket calculator. It has a full range of functions, including factorial, power and root calculations, all with multi display formats and memories.

ADDRESS BOOK & DIALLER

Portfolio has a complete address book facility that allows you to store hundreds of addresses and phone numbers. And, at the touch of a button, you can retrieve any one of them, or search for a specific grouping, such as "all Italian restaurants". And, when you are ready to book your table, hold your Portfolio to your telephone mouthpiece and use its special built-in tone dialler to dial the number for you.

TEXT PROCESSOR

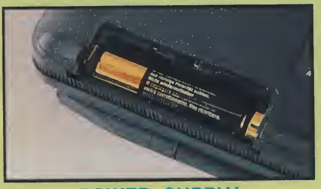
The Portfolio's built-in text processor program includes word wrap, line and column count, string search, in fact most of the functions you would find in a word processor. It handles printer and word processor control codes and allows easy transfer of files between Portfolio and your desktop PC.

SPREADSHEET

For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

MEMORY CARDS

Portfolio can store and retrieve data and programs from its own RAM, or from small credit card size memory cards, that slot into its built-in card drive. The cards are available in three sizes, 32K, 64K and 128K, so you can carry a library of data in your pocket. The card drive also accepts ROM cards, which can contain commercial or custom software.



POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

INTERFACES & PERIPHERALS

Portfolio can communicate with other computers and supports a growing range of peripherals via a built-in 60 pin bus connector. Peripherals available include serial and parallel interfaces and memory expanders (to 640K). You can also add a card drive to your desktop PC, to enable it to read/write to Portfolio's cards.

SILICA SYSTEMS OFFER YOU

FREE OVERNIGHT COURIER DELIVERY: On all hardware orders shipped in the UK.
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PRICE MATCH: We normally match competitors on a "Same product - Same price" basis.
ESTABLISHED 12 YEARS: Proven track record in professional computer sales.
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Before you decide when to buy your new Atari Portfolio, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Portfolio, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new Portfolio products? At Silica Systems, we ensure that you will have nothing to worry about. Silica Systems is a new division of Silica Shop, the UK's leading Atari specialists. This new division has been established to provide a service to the more serious home user, as well as to business and education purchasers. Silica have been established for over 12 years, and have an annual turnover of £13 million. With our unrivalled experience and expertise, we can now claim to meet our customers requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now, for our latest Free literature and begin to experience the "Silica Systems Service".

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Which computer(s), if any, do you own? ....

E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

AMIGA PCs

After last week's round-up, we decided to let Jason holborn loose on a couple of the best PC emulators available for the Amiga...

Little more than a few months ago, PC emulation on the A500 meant only one thing – Transformer, a very creaky (and very slow) software-based emulator that made even a ZX81 look fast. But, within the space of a couple of months, the A500 has two of the best PC emulators available – Bitcon's KCS Power PC Card and SDL's ATonce AT emulator.

KCS POWER PC BOARD

£300 / Amiga 500 only / Bitcon Devices 091 4901919. The KCS Power PC card is produced by Dutch developers KCS; the card combines ease of installation and a high level of compatibility within a very complete package. Here's what it offers.

INSTALLATION

Installing the Power PC Card is an absolute doddle. Just remove the cover of the RAM expansion slot underneath your machine, slot in the KCS card, replace the cover and that's it! And because there's no need to open up your A500, you won't invalidate your warranty.

This is obviously great news for users with just a 512k Amiga, but what about those of us with RAM expansions? Once you've got KCS installed, you don't really need a separate RAM expansion anymore – the KCS card has a Megabyte of RAM built into it (512k of normal RAM, and a further 512k which can be used as a RAM disk).

SCREEN EMULATION

The card supports an impressive range of screen modes. There's the usual CGA and Hercules modes, with CGA mode now supporting a full sixteen colours and Hercules has been enhanced to allow it to run in flicker-free productivity mode under ECS. The German designers are hard at work with both EGA and VGA support which should be available in the form of a software upgrade some time next year.

Screen update is surprisingly fast. Even when using KCS in 16 colour CGA mode, it managed to update things at a very reasonable rate. Text rendering is particularly fast (although still not as fast as a real PC). If you're using the KCS card for applications, then screen rendering is more than satisfactory.

PC
SuperDisk

• *With either board, CGA PC applications run quite happily*

SOFTWARE COMPATIBILITY

Virtually all the software I tested worked without hitch, and even some games worked. I managed to test software such as Ashton Tate's dBASE III+, WordStar, Borland's Turbo C (and Turbo Pascal), Microsoft QuickBASIC and a couple of games – *Art of War* and *Omnicron Conspiracy*.

In the case of applications everything went fine, but screen update is perhaps rather too slow for serious games playing. Strategy games, etc, are fine, but arcade games are out of the question.

FEATURES

The KCS card isn't just a PC emulator – it also doubles up as a RAM expansion, making it ideal for those users wanting an extra 1Mb of RAM.

DOCUMENTATION

There's a comprehensive manual covering all the basics of operation, a copy of MSDOS 4.01, MSDOS Shell and GW-BASIC (the combined price of this little lot is about £130).

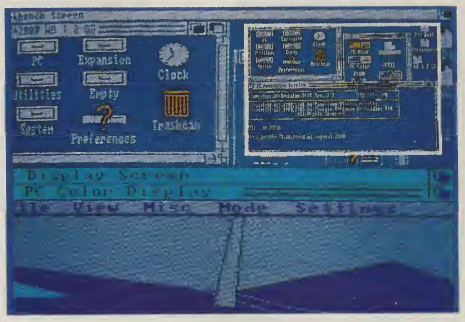
ATONCE

£200/Amiga 500/2000/Silica Distribution 081-309 1111 Little more than a few weeks old, the 80286-based ATonce emulator is the device that everyone has been talking about with its full support for the Amiga's multitasking facilities.

INSTALLATION

Installing ATonce certainly isn't a simple affair. You're going to have to open up your Amiga (therefore invalidating your warranty) and fit the ATonce PCB and an extra 'Gary Module' which sits between the Gary chip and the Amiga.

Installing the ATonce PCB involves removing your old 68000 chip. Surprisingly,this doesn't need to be reinstalled – ATonce includes its own built-in 68000 which is soldered on the underside of the card.



• **As with the Bridgeboard, it's possible to multitask PC programs with the ATonce board!**

SCREEN EMULATION

ATonce supports four separate screen modes – CGA, Hercules, Olivetti and Toshiba 3100 – with a maximum of 16 colours on screen which can be set up from 4,096. In practice though, screen update tended to slow down rather a lot when using ATonce in 16 colour mode. For most applications though, four colours would be perfectly adequate, so this isn't too much of a problem (after all, you weren't going to play PC games, were you?)

If you're using ATonce on an Amiga 2000, it does have a distinct advantage of KCS. According to SDL, ATonce can use the PC slots inside the 2000 series. As a result, there's no real reason why ATonce shouldn't be able to use just about any PC video card.

SOFTWARE COMPATIBILITY

Once again, very high. Most of the software I tested under KCS also worked fine under ATonce, although they didn't all pass the test. For starters, both games that worked under KCS would not work under ATonce. Also, some applications didn't like ATonce. In general though, all the major packages (*dBASE, Lotus, Word Star* etc) worked fine.

FEATURES

The major feature of ATonce is its support for the Amiga's multitasking facilities. ATonce runs in its own custom screen, thus allowing you to run both PC and AmigaDOS applications simultaneously. However, you really need at least 1.5 Mb to make this feasible because ATonce uses a huge chunk of the Amiga RAM.

DOCUMENTATION

The manual which comes with ATonce is pretty good, but that's about all you get. Surprisingly Vortex have decided not to bundle MS-DOS, a decision which I just can't figure out. Ok, if you already own a PC then you can use the boot disk from that, but then most Amiga owners don't own a PC so MS-DOS has to be bought separately to use the emulator. Luckily though, SDL will also sell you a copy of MS-DOS for about £40. ■

DECISION TIME

In the end, there can be only one. Deciding upon which to buy is difficult, as both have advantages and disadvantages – KCS is simple to install, yet ATonce will multitask, etc. So which is best?

From a technical viewpoint, ATonce seems to win hands down. Ok, it's not quite as compatible, but multitasking PC programs with Amiga programs is so useful (especially if CrossDOS is installed). A lot has been made of ATonce being 286 based, but when I ran the well respected Norton Utilities through both, I had bit of a shock. According to Norton SysInfo, both ran at exactly the same speed (a computer index rating of 2.8 for those of you who are interested). So what's the point in a 286-based emulator? Poser value, I suppose.

From an emulation point of view, there's very little to separate them. Indeed, in the end it comes down to a question of value for money. Although I love being able to multitask PC programs, I still feel that KCS is perhaps the better of the two. It's just more complete - you get everything you need to get up and running, plus it doubles up as a RAM expansion.

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created … affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

ABC TURBO
AVAILABLE: JUNE 90

To put the ABC even further ahead of the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024×768, we have included a Super VGA graphics adaptor and a 14″ VGA colour monitor (which also supports 1024×768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

LOW PRICE - HIGH SPEC!

CPU+MOTHERBOARD
- 8Mhz 80286 16-bit CPU
- Landmark Speed = 10.3Mhz, Norton SI Test = 9.0
- Latest NEAT (New Enhanced AT) technology chip set
- Has user selectable bus, DMA speeds & wait states
- Programmable to operate at 0 or 1 wait states
- 640K RAM base memory (expandable)
- Motherboard expandable to 4Mb RAM memory
- Real time clock with battery back-up
- Full 16-bit data line capability
- Socket for 80287-8 numeric Co-Processor
- 3 16-bit AT expansion slots (max)

DISK
- 32Mb RLL hard disk - 150KBytes/s transfer - 60ms access
- Fast disk controller - 800KBytes/s transfer - *Turbo version*
- 1.44Mb built-in 3½″ floppy disk drive
- Space for two 5¼″ and two 3½″ drives (max)

I/O
- Parallel port built-in (25-pin Centronics)
- Serial port built-in (9-pin RS-232)
- Mouse controller port built-in (9-pin serial)

GRAPHICS
- Super VGA video graphics controller - *512K - Turbo vers*
- Super VGA: 256 colours in 800×600 res - *Turbo vers*
- EGA video graphics controller built-in
- EGA: 16 colours available from a palette of 64
- EGA: 256K of dedicated Video RAM built-in
- MDA, CGA and Hercules graphics controller built-in

PHYSICAL
- Low noise operation
- Ergonomic small footprint (38cm×41cm×15cm)
- Keyboard - 102 key enhanced AT (12 function keys)
- Keyboard - has 2 position height adjusters

PLUS!
- Fully OS/2 compatible (requires 4Mb RAM)
- Supports Industry Standard Networks
- MS-DOS 3.3 with GW BASIC 3.22
- 12 Months FREE on-site maintenance included

286 AT

WITH 30Mb HARD DISK & EGA MONITOR - £899

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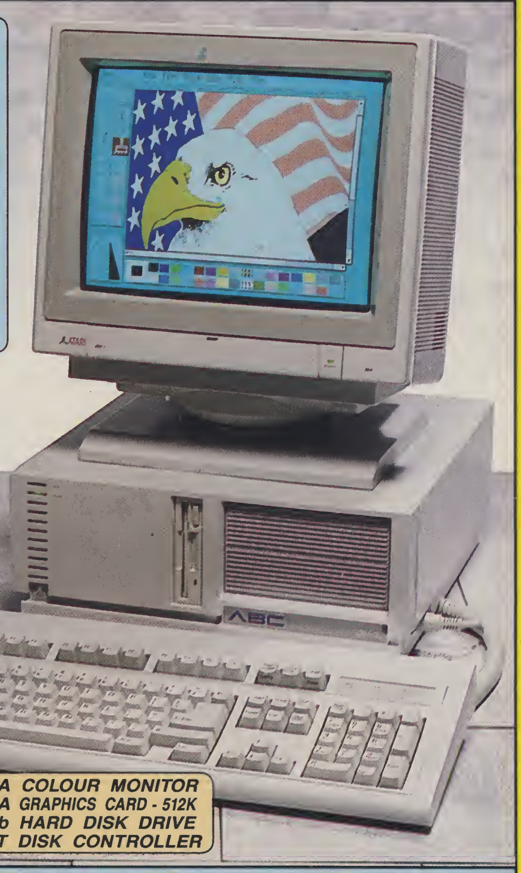

ABC TURBO £1299 EXC VAT
- *SVGA COLOUR MONITOR*
- *SVGA GRAPHICS CARD - 512K*
- *30Mb HARD DISK DRIVE*
- *FAST DISK CONTROLLER*

£899 +VAT= £1033.85

ATARI

	3½″ FLOPPY DRIVE NO HARD DRIVE	3½″ FLOPPY DRIVE + 30Mb HARD DRIVE
NO MONITOR	**£599** +VAT = £688.85	**£799** +VAT = £918.85
+ EGA MONO	**£699** +VAT = £803.85	**£899** +VAT = £1033.85
+ EGA COLOUR	**£799** +VAT = £918.85	**£999** +VAT = £1148.85
ABC TURBO AVAIL: JUNE 90 • 14″ SVGA COLOUR MONITOR • SVGA GRAPHICS ADAPTOR • FAST DISK CONTROLLER	**£1099** +VAT = £1263.85	**£1299** +VAT = £1493.85

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IT'S THE PERFECTLY PRISTINE PROTEXT PROCESSOR PRIZE PAGE!

WIN!

Your chance to treat your PC, Archimedes, Amiga or ST to the best value for money word processor around.

FAST, FAST, FAST – those are the words that come to mind when you're using Protext. That and fabulously comprehensive pull-down menus, mouse dragging to set blocks and 36 files open at any one time. But hold on a minute – Protext doesn't do those super-whizzy things pal!. Well it does now Mate! We're talking version 5 here, we're taking graphics handling, we're tallking column printing, we're talking good-bye command line interface altogether if you can't be bothered with the damn thing, we're talking full interactive control baby! It'll even handle Serbo-Croatian, Basque, Lithuanian, Esperanto, Flemish, Slovak and even we're-so-glad-you-might-at-last-have-started-to-junk-all-that-old-macho-Stalinist-posturing-guys Albanian!

So along with the not inconsiderable assistance from those awfully wonderful guys at Arnor, *Express* is giving away five copies of Protext 5 – each worth oh, something approaching £150 a shot. So there you have it – or rather you will if you're smart and lucky enough to correctly answer the following five questions. And HEY! Send them on the back of a postcard – ol' Tim Smith don't wanna spend all his time touching the remnants of your bodily secretions does he now?

All entries should be at this office no later than Monday 24 December 1990. Alright? – so here we go

1) Where is Albania?

A) Eastern Europe
B) Nowhere Pal!
C) Stockport
D) Part of Russia
E) An island in Scandinavia

2) Which man recently succeeded Enver Hoxha as Albanian premier ?

A) err? ...
B) err?... Boris Yeltsin?
C) now then....erm...
D) even we can't remember and we're setting the questions but it's definitely not b) so just put a) and have done with.

3) Which airport's duty-free shop did the Albanian national football team recently 'mistake' for a 'take away anything you like for nothing' supermarket ?

A) Gatwick
B) Heathrow
C) Prestwick
D) Stansted

4) Given the Albanians' curious interpretation of the meaning of the word 'free', what do you think, assuming they had a flourishing computer games industry, their response would be upon being offered pirated software? (Hint – there's a moral in here somewhere all you Jolly Rogers)

A) Corkski!- I'll have that!
B) Corkski!- I'll have that!
C) Corkski!- I'll have that!
D) Corkski!- I'll have that!

5) Which infamous British double agent warned the Albanian authorities of a CIA plan to invade their country?

A) Kim Philby
B) Kim Burgess
C) Kim McClean
D) Kim Basinger

There you go then. Even if you haven't the faintest idea why a competition to win Protext should be full of questions about a remote and outmoded peasants' dictatorship simply fill in the form below and send it off to us here at: 'It'll be Albania Next', *New Computer Express*, 30 Monmouth Street, Bath, Avon, BA1 2BW.

Name..

Address..

....

The answers are: 1) 2) 3) 4) 5)

Supplementary question in the event of a tie breaker:

I've always wanted to win a copy of Protext because ....

.... (*no more than 2500 words with accompanying screenshots please*)

THIS IS ALBANIA

WINNERS!

So which lucky dude won the Archimedes Learning Curve bundle we were giving away? No, sorry, it's not you Mr. Stephen Daniels of Anstey, Leicester. In fact the winner is –

GEOFF PERCIVAL OF PONTEFRACT, YORKSHIRE

YEESSSSSSSSSSSS!!!!So come on down Geoff! your RISC based monster will be awaiting you at a sumptuous star-studded extravaganza at Acorn HQ in the New Year.

But hang on in there Stephen – you might just be one of the three lucky runners-up who's going to be receiving a couple of tickets to the centre of shopaholicism – The Computer Shopper Show. But no you're not! – What a truly remarkable turn of events. The judges have brought in an extraordinary decision that will doubtless leave the plucky Leicester lad reeling. They've decided to offer the consolation prizes to –

HUGO BELL OF MIDDLESBOROUGH
TIM HASTINGS OF BLACKPOOL
AND NIGEL GILBERT OF KETTERING

– the poor lad can't take it , two name-checks and he still doesn't figure in the first four. Good job then he's an old friend of the editor's and still owes him money.

BUT HOLD ON A SECOND!

No better not – only a few more lines to go in this ish and there's no more winners yet so you'll just have to hang on 'til next week sorry

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RETALIATOR
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A500 BATMAN PACK

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BATMAN

The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

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New Zealand Story	£24.95
Interceptor	£24.95
Deluxe Paint II	£49.95
TOTAL RRP:	£549.78
Less Pack Saving:	£150.78
PACK PRICE:	**£399.00**

£399 INC VAT

AMIGA 2000

For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

£1295
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Flight of Fantasy is the very latest Amiga 500 pack from Commodore, featuring BRAND NEW software releases, to make this the most spectacular A500 pack ever! The pack features the Amiga 500 computer with mouse controller and TV modulator, as well as four top software titles. These include the following:

DELUXE PAINT II:

The high quality graphics program that set the standard for other Amiga art packages. Deluxe Paint II includes powerful, easy to use tools that bring out the artist in you. Create masterpieces, presentations, 3D perspectives or just doodle.

ESCAPE / ROBOT MONSTERS:

Here's something completely different - a science fiction story with comic book style graphics. Our heroes Jake and Duke are on the Planet X rescuing Humans who have been captured by the Robot Monsters and forced to create an evil Robot Army to DESTROY EARTH! Jake and Duke fight their way through hordes of evil Robots to help the Humans escape.

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Slip on your magic shoes, practise throwing a rainbow and you're ready to go island hopping. From the Island of Doh to Monster Island, you will encounter Doh himself, stinging insects, lethal combat machines, mechanical assailants, the formidable beings of legend and folklore. Finally enter the world of darkness and its inhabitants.

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Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.
- **DOS COMMANDS**
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